INSTITUTE MIHAJLO PUPIN
No. 1410/4-23
26-12-2023 year
BELGRADE, SERBIA

Amendment No. 1 to the Subcontract no. 1410/1-23 dated June 23, 2023

for the Equipment Procurement and Dispatcher's Work Execution of Railway Line between Novi Sad station ---Subotica section

CRSC INTERNATIONAL CO., LTD. OGRANAK BEOGRAD

AND

INSTITUT MIHAJLO PUPIN DOO BEOGRAD

THIS **Amendment No. 1 to the Subcontract no. 1410/1-23 dated June 23, 2023 for the Equipment Procurement and Dispatcher's Work Execution of Railway Line between Novi Sad station ---Subotica section (hereinafter referred as: Amendment No. 1 of the Subcontract)** is made between:

Party A:

CRSC INTERNATIONAL CO., LTD. OGRANAK BEOGRAD, with the registered seat in Belgrade, Belgrade-Zemun, Majevička 2m,registration no:29507678, tax identification no:110760071,legally represented by Mr. Xu Yang, Legal representative of the branch office (hereinafter also referred to as: "**Party A**").

And

Party B:

INSTITUT MIHAJLO PUPIN DOO BEOGRAD, duly incorporated pursuant to the law of the Republic of Serbia, having its registered office and principal place of business at Volgina Street no. 15, Belgrade, Serbia, registration no: 07014694, TIN no: 100008310, represented by Nikola Tomašević, Ph.D.El.Eng, Director General (hereinafter referred to as: **"Party B"** or "Subcontractor")

PREAMBLE

Whereas,

After the conclusion of the Subcontract for the Equipment Procurement and Dispatcher's Work Execution of Railway Line between Novi Sad station - Subotica section no. 1410/1-23 dated 23rd June 2023 (hereinafter: Subcontract), a different distribution of work was carried out between the Party A and Party B ;

And

That this change in the distribution of work required a change in the scope of Party B's work, i.e. the change in Part-5 in terms of description of items and Part-6, for which Party B submitted a new offer, with added works on local cable network (previous numeration was Part 6, and now is Part 6,7) in which the total for Part-6,7 is 855,585.96 USD net which was accepted and confirmed by CRSC;

The Parties to the Amendment No. 1 of the Subcontract agreed to amend the provisions of the Subcontract as follows:

Article 1.

Party A and Party B amend the provisions of the first paragraph of Article 3.1 as follows:

3.1 Subcontract Price

The Subcontract total price and the unit price is fixed, The Subcontract price is USD **4.716.664,59** without VAT (if any, VAT will be calculated and paid according to the VAT Law of the Republic of Serbia). The above price shall include all the expenses required by Party B to implement and complete the scope of work of Party B as stipulated in this Subcontract, changed by this Ammendment No. 1, and fees charged by the government department and adjustment, etc. are included in the Subcontract price which are related to Party B legal obligations for equipment procurement and dispatcher's, local cable network, RDV works. Party B has fully anticipated the possible within the scope of all risks, Unit price is not adjusted for risk range of any changes.

Article 2.

Party A and Party B amend the provisions of the first paragraph of Article 5 to the tekst of Appendix 2 as follows:

Article 5 Composition of the Subcontract

The Subcontract consists of the following documents:
(1) Subcontract
(2) Subcontract Appendixes:

Appendix 1: The Priced Bill of Quantities (BoQ)

SUMMARY			
No.	**Project**	**Drawing no.**	**Price (USD)**
Part - 5	**DISPATCHER SYSTEM - Material**	**5.4**	**3,212,456.55**
Part - 6,7	**DISPATCHER SYSTEM - Works and Local cable networks**	**5.4**	**855,585.96**
Part - 8	**RDV System**	**5.8.1**	**648,622.08**
		Total USD without VAT	**4,716,664.59**

The detailed BoQ content of the Amendment No. 1 of Subcontract price will be referred to the **Appendix-1 priced bill of quantities, i.e. referred to all Parts, Part -5, Part -6,7 and Part -8 (all as consecutive part of this Amendment 1).** BoQ content defined in Appendix-1 of the this Amendment No. 1 shall be deemed valid from signing of this Amendment No.1.

Article 3.

Party A and Party B amend the provisions of the paragraph 13.2.1 of Article 13 as follows:

13.2.1 Pay for Advance payment

The advance payment shall be used by Party B to purchase materials, project equipment, construction equipment, temporary facilities, expenses of Party B, and organize the construction team to enter the site for the construction of the Subcontract project. The advance payment shall be as defined in this article of Amendment 1 of the Subcontract and per parts is divided by next schedule:

- For Part-5 - Dispatcher Devices-Material after Party B submit to Party A DeBo certificate – advance payment is **USD 642.491,31 without VAT**
- For Part- 6,7 - Dispatcher devices – Works and Local cable networks – 30 days before start of Works, Party A inform in written form Party B about start of Works – advance payment is **USD 172.114,58**
- For Part -8 – RDV system – after signing of this Agreement – advance payment is **USD 129.724,41 without VAT**

For all advance payments, within 5 (five) working days after Party B submits the separate guarantees accepted by Party A and above conditions, Party A shall pay the advance payment stipulated in this Subcontract to Party B. If Party B fails to submit the advance payment guarantee, Party A shall not pay the advance payment to Party B. Party B shall submit the guarantee as per 14.3.1. Clause.

The advance payment is deducted from the project progress payment. The method of deduction is proportionally comparing to total amount per each Part, deducted of the bill amount from each interim payment certificate and each scope-part and invoices until the full amount of the advance payment is deducted.

Upon signing the Amendment No. 1 of the Subcontract, the Parties confirm that Party A paid agreed advance payments, i.e. Party B has been issued adequate advance payment guarantees.

Article 4.

Party A and Party B amend the provisions of the paragraph 29.1 of Article 29 as follows:

29.1 All notices, requests, instructions, documents and any other type of communication between the parties shall be made in accordance with the following contact information (contact person, appropriate address/email address, telephone number):

Party A's notification address:
Contact: Zhu Yubao
Address: Belgrade, Belgrade-Zemun, Majevicka 2m, Serbia
Email address: crsc.xsxmb@gmail.com
Telephone: +381 66 888 5398

Party B's addresses shall be used for the purpose of notification:
Contact person 1: Dusan Stosic, Project Manager / Director
Address: Volgina 15
E-mail address: dusan.stosic@pupin.rs
Telephone: +38163358091
E-mail address in CC:
ljubomir.becejac@pupin.rs
mladen.gajcanski@pupin.rs
nenad.petrovic@pupin.rs

Article 5.

Party A and Party B agree that in case of any conflict between the stipulations of this Amendment No. 1 of Subcontract and the Subcontract, the stipulations of this Amendment No. 1 of Subcontract shall be deemed valid.

Article 6.

An integral part of this Anmendment No 1 of the Subcontract are following documents:

Appendix-1

- Bill of quantities for Part -5,
- Bill of quantities for Part -6,7
- Bill of quantities for Part -8

Article 7.

This Anmendment No 1 of the Subcontract is made in 6 (six) copies, with Party A 4 (four) copies and with Party B 2 (two) copies.

This Anmendment No 1 of the Subcontract shall come into force after it is signed by the legal representatives or authorized representatives of Party A and Party B and sealed by the parties.

For and on behalf of Party A:

Mr. Xu Yang
Legal Representative of the branch office

For and on behalf of Party B:

Nikola Tomašević, Ph.D.El.Eng
Director

APPENDIX-1 OF AMENDMENT No.1 to the Subcontract no. 1410/1-23 dated June 23, 2023

SUMMARY			
No.	**Project**	**Drawing no.**	**Price (USD)**
Part - 5	**DISPATCHER SYSTEM - Material**	**5.4**	**3,212,456.55**
Part - 6,7	**DISPATCHER SYSTEM - Works and Local cable networks**	**5.4**	**855,585.96**
Part - 8	**RDV System**	**5.8.1**	**648,622.08**
		Total USD without VAT	**4,716,664.59**

CRSC INTERNATIONAL CO., LTD. OGRANAK BEOGRAD

Party A, Mr. XU YANG

INSTITUTE MIHAJLO PUPIN BELGRADE

Party B, Nikola Tomašević

BILL OF QUANTITIES FOR PART-5, APPENDIX-1
NOVI SAD - SUBOTICA
BILL OF QUANTITY
BOOK 5.4
DISPATCHER SYSTEM - MATERIAL

Item	Description	UoM.	Qty	Unit price	TOTAL
				USD	USD
5.4.02	**DISPATCHER DEVICES NOVI SAD - SUBOTICA**				
5.4.02.01	**Central traffic dispatcher Novi Sad - Subotica**				
5.4.02.01.01	**Material**				
5.4.02.01.01.01	Central dispatcher device complete with translators and transformers	pcs.		29,397.01	
5.4.02.01.01.02	Pulse repeater	pcs.		1,782.60	
5.4.02.01.01.03	120 push bottons console	pcs.		10,512.66	
5.4.02.01.01.04	Additional 108 call-respodn push button console			11,702.40	
5.4.02.01.01.05	TK console for Central traffic dispatching telephony system - touchcomputer and intercom based, built-in loudspeakers, goose-neck microphone, optional handset, line and PTT keys, dual Gigabit Ethernet interface	pcs.	1	9,753.17	9,753.17
5.4.02.01.01.06	Central traffic dispatching telephony system server, 19" rack mount with IP PBX software for VoIP communication in Dispatcher and Track telephony systems over Gigabit Ethernet 1000Base-T port	pcs.	1	41,362.91	41,362.91
5.4.02.01.01.07	Network equipment: - Layer 3 connectivity to the dedicated IP network for Dispatching and Track telephony system on this track section over OK1 and OK2 trackside fiber optic cables; 1000Base-LX 20km or 1000Base-EX 40km SFP ports for connections to the node of that network; 1000Base-T PoE ports for connections with TK console	set	1	16,527.78	16,527.78
5.4.02.01.01.08	19" standalone cabinet 42U/600x800mm, for installation of Central traffic dispatching telephony system server, Central electric traction dispatching telephony system server and network active equipment as parts of Central traffic dispatching telephony system and power supply equipment. Corresponding fiber optic and S/FTP patch cables included.	set	1	2,877.00	2,877.00
5.4.02.01.01.09	Uninterruptible power supply system 2200VA 230VAC with battery charger and external ACCU VRLA battery set 48VDC 200Ah	set	1	3,890.00	3,890.00
5.4.02.02	**Central electric traction dispatcher Novi sad - Indjija and Novi Sad - Subotica**				
5.4.02.02.01	**Material**				
5.4.02.02.01.01	45-pushbuttons console	pcs.		4,128.10	
5.4.02.02.01.02	27-pushbuttons console	pcs.		4,052.47	
5.4.02.02.01.03	Pulse repeater	pcs.		1,782.60	
5.4.02.02.01.04	Central dispatcher device complete with translators and transformers	pcs.		29,397.01	
5.4.02.02.01.05	TK console for Central Central electric traction dispatching telephony system - touchcomputer and intercom based, built-in loudspeakers, goose-neck microphone, optional handset, line and PTT keys, dual Gigabit Ethernet interface	pcs.	1	9,753.17	9,753.17
5.4.02.02.01.06	Central electric traction dispatching telephony system server, 19" rack mount with IP PBX software for VoIP communication in Dispatcher and Track telephony systems over Gigabit Ethernet 1000Base-T port	pcs.	1	41,362.91	41,362.91

BILL OF QUANTITIES FOR PART-5, APPENDIX-1 NOVI SAD - SUBOTICA BILL OF QUANTITY BOOK 5.4 DISPATCHER SYSTEM - MATERIAL					
5.4.02.02.01.07	Network equipment: - Layer 3 connectivity to the dedicated IP network for Dispatching and Track telephony system on this track section over OK1 and OK2 trackside fiber optic cables; 1000Base-LX 20km or 1000Base-EX 40km SFP ports for connections to the node of that network; 1000Base-T PoE ports for connections with TK console	set	1	16,527.78	16,527.78
5.4.02.03	**Station dispatcher device Novi Sad**				
5.4.02.03.01	**Material**				
5.4.02.03.01.01	80-pushbuttons console	pcs.		5,379.03	
5.4.02.03.01.02	Central deivce for 80- key console, 8 + 12 CB lines , 2 ATA connections 11 LB connections with 8 call selectors	pcs.		29,397.01	
5.4.02.03.01.03	Optical transmission deviced comprising optical tranceivers (II window - 1.320 nm), AD-Drop multiplexor, AD/DA converters and interfaces	pcs.		26,269.64	
5.4.02.03.01.04	4-wire command unit	pcs.		5,941.96	
5.4.02.03.01.05	4-wire selective translator with ca 8 CB connections	pcs.		9,947.04	
5.4.02.03.01.06	4-wire selective translator with ca 12 CB connections	pcs.		12,109.06	
5.4.02.03.01.07	2-wire selective translator	pcs.			
5.4.02.03.01.08	4-wire selective translator for electric traction dispatcher	pcs.		4,753.56	
5.4.02.03.01.09	Computer based 24 channel voice recorder	pcs.		30,840.70	
5.4.02.03.01.10	Rectifier 230 V/24 V/10 A + sealed accu battery 24 V/120 Ah- poles pd floating potential	pcs.		1,876.41	
5.4.02.03.01.11	Feeding unit for powering station telephone cabinets (TUS,TIS) - connected to 24 V=	pcs.		875.66	
5.4.02.03.01.12	Two-way feeding unit for emote powering of ATB telephone cabinets - connected t0 24 V=	pcs.		875.66	
5.4.02.03.01.13	Transformer T2 600:1.200 Ω	pcs.		99.88	
5.4.02.03.01.14	Transformee T3 2.000:5.000 Ω	pcs.		187.65	
5.4.02.03.01.25	TK console for Station dispatching telephony system - touchcomputer and intercom based, built-in loudspeakers, goose-neck microphone, optional handset, line and PTT keys, dual Gigabit Ethernet interface	pcs.	1	9,753.17	9,753.17
5.4.02.03.01.26	Station dispatching telephony system server, 19" rack mount with IP PBX software for VoIP communication in Dispatcher and Track telephony systems over Gigabit Ethernet 1000Base-T port	pcs.	1	41,362.91	41,362.91

BILL OF QUANTITIES FOR PART-5, APPENDIX-1 NOVI SAD - SUBOTICA BILL OF QUANTITY BOOK 5.4 DISPATCHER SYSTEM - MATERIAL					
5.4.02.03.01.27	Network equipment: - Redundant Layer 3 connectivity to the dedicated IP network for Dispatching and Track telephony system on this track section over OK1 and OK2 trackside fiber optic cables; 1000Base-LX 20km or 1000Base-EX 40km SFP ports for connections to the node of that network; 1000Base-T or 1000Base-T PoE ports for connections with TK console, Auxiliary phone, horn loudspeaker, LB telephones - Layer 2 connectivity with 12 telephones at the entry and 10 telephones at the exit signals over local fiber optic cables; 100Base-LX 10km or 1000Base-LX 10 km ports for these connections - Layer 2 connectivity to the ERPS G.8032 ring of Layer 2 switches on the interstation distance between Novi Sad and Rumenka stations over OK3 local fiber optic cable for connection with ATB phones and with LB and CB telephone in ETS Novi Sad; 1000Base-LX 20 km ports for these connections	set	1	21,340.00	21,340.00
5.4.02.03.01.28	19" standalone cabinet 42U/600x800mm with fiber optic and S/FTP patch panels, for installation of Station dispatching telephony system server and network active equipment as parts of Station dispatching telephony system. Corresponding fiber optic and S/FTP patch cables included.	set	1	3,963.00	3,963.00
5.4.02.03.01.29	Uninterruptible power supply system 2200VA 230VAC with battery charger and external ACCU VRLA battery set 48VDC 200Ah	set	1	3,890.00	3,890.00
5.4.02.03.01.30	AC/DC converters and protection equipment for 48VDC power distribution to station railway telephones	set	1	2,615.00	2,615.00
5.4.02.03.01.15	Set of tools, instruments and accessories and a compter with software Комплет алата, инструмената, прибора и рачунар са софтвером	set	1	2,501.88	2,501.88
5.4.02.03.01.16	Telephone at the entry signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	12	3,565.17	42,782.04
5.4.02.03.01.17	Telephone at the exit signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	10	3,440.08	34,400.80
5.4.02.03.01.18	LB SIP telephone / wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	2	809.60	1,619.20
5.4.02.03.01.19	Loud tone bell	pcs.		375.36	
5.4.02.03.01.31	Outdoor SIP horn loudspeaker, Gigabit Ethernet interface for communication with station railway dispatching telephony system server, PoE or 24VDC power supply. Reproduction of predefined tone sequences, equivalent to departure ringing signals	pcs.	1	750.02	750.02
5.4.02.03.01.20	Auxiliary SIP telephone 12-lines, Gigabit Ethernet interface for VoIP communication	pcs.	1	1,376.02	1,376.02
5.4.02.03.01.21	Dispatcher device for the machinery dispatcher	set	1	7,801.60	7,801.60
5.4.02.03.01.22	JH(St)H 2x2x0.8	m	120	1.20	144.00
5.4.02.03.01.23	JH(St)H 10x2x0.8	m			
5.4.02.03.01.24	JH(St)H 20x2x0.8	m			
5.4.02.03.01.32	Cable S/FTP cat. 6a	m	740	1.20	888.00
5.4.02.03.01.33	Cable N2XH-J 3x2.5mm2	m	240	2.50	600.00
5.4.02.04	**Station dispatcher device Sajlovo**				

BILL OF QUANTITIES FOR PART-5, APPENDIX-1
NOVI SAD - SUBOTICA
BILL OF QUANTITY
BOOK 5.4
DISPATCHER SYSTEM - MATERIAL

5.4.02.04.01	**Material**				
5.4.02 04.01.01	45-pushbuttons console	pcs.		4,128.10	
5.4.02 04.01.02	Central deivce for 45- key console, 10 CB lines , 2 ATA connections 7 LB connections with 4 call selectors	pcs.		29,397.01	
5.4.02 04.01.03	Optical transmission deviced comprising optical tranceivers (II window - 1.320 nm), AD-Drop multiplexor, AD/DA converters and interfaces	pcs.		26,269.64	
5.4.02 04.01.04	4-wire command unit	pcs.		5,941.96	
5.4.02 04.01.05	4-wire selective translator with ca 10 CB connections	pcs.		9,947.04	
5.4.02 04.01.06	4-wire selective translator for electric traction dispatcher	pcs.		4,753.56	
5.4.02 04.01.07	Rectifier 230 V/24 V/10 A + sealed accu battery 24 V/120 Ah- poles pd floating potential	pcs.		1,876.41	
5.4.02 04.01.08	Feeding unit for powering station telephone cabinets (TUS,TIS) - connected to 24 V=	pcs.		875.66	
5.4.02 04.01.09	Two-way feeding unit for emote powering of ATB telephone cabinets - connected t0 24 V=	pcs.		875.66	
5.4.02 04.01.10	Transformer T2 600:1.200 Ω	pcs.		100.09	
5.4.02 04.01.11	Transformee T3 2.000:5.000 Ω	pcs.		187.65	
5.4.02.04.01.22	TK console for Station dispatching telephony system - touchcomputer and intercom based, built-in loudspeakers, goose-neck microphone, optional handset, line and PTT keys, dual Gigabit Ethernet interface	pcs.	1	9,753.17	9,753.17
5.4.02.04.01.23	Station dispatching telephony system server, 19" rack mount with IP PBX software for VoIP communication in Dispatcher and Track telephony systems over Gigabit Ethernet 1000Base-T port	pcs.	1	41,362.91	41,362.91
5.4.02.04.01.24	Network equipment: - Redundant Layer 3 connectivity to the dedicated IP network for Dispatching and Track telephony system on this track section over OK1 and OK2 trackside fiber optic cables; 1000Base-LX 20km or 1000Base-EX 40km SFP ports for connections to the node of that network - Layer 2 connectivity with 8 telephones at the entry and 4 telephones at the exit signals over local fiber optic cables; 100Base-LX 10km or 1000Base-LX 10 km ports for these connections	set	1	18,360.00	18,360.00
5.4.02.04.01.25	19" standalone cabinet 42U/600x800mm with fiber optic and S/FTP patch panels, for installation of Station dispatching telephony system server and network active equipment as parts of Station dispatching telephony system. Corresponding fiber optic and S/FTP patch cables included.	set	1	3,963.00	3,963.00
5.4.02.04.01.26	Uninterruptible power supply system 2200VA 230VAC with battery charger and external ACCU VRLA battery set 48VDC 200Ah	set	1	3,890.00	3,890.00
5.4.02.04.01.27	AC/DC converters and protection equipment for 48VDC power distribution to station railway telephones and to the station building	set	1	2,615.00	2,615.00
5.4.02 04.01.12	Set of tools, instruments and accessories and a compter with software	pcs.	1	2,501.88	2,501.88
5.4.02 04.01.13	Telephone at the entry signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	8	3,566.15	28,529.20

BILL OF QUANTITIES FOR PART-5, APPENDIX-1 NOVI SAD - SUBOTICA BILL OF QUANTITY BOOK 5.4 DISPATCHER SYSTEM - MATERIAL					
5.4.02 04.01.14	Telephone at the exit signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	4	3,440.08	13,760.32
5.4.02 04.01.15	Auxiliary SIP telephone 7-lines, Gigabit Ethernet interface for VoIP communication	pcs.	1	1,462.80	1,462.80
5.4.02 04.01.16	LB SIP telephone / wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	1	809.60	809.60
5.4.02 04.01.17	Loud tone bell	pcs.		375.36	
5.4.02.04.01.28	Outdoor SIP horn loudspeaker, Gigabit Ethernet interface for communication with station railway dispatching telephony system server, PoE or 24VDC power supply. Reproduction of predefined tone sequences, equivalent to departure ringing signals	pcs.	1	750.02	750.02
5.4.02.04.01.19	JH(St)H 2x2x0.8	m	30	1.20	36.00
5.4.02.04.01.20	JH(St)H 10x2x0.8	m			
5.4.02.04.01.21	JH(St)H 20x2x0.8	m			
5.4.02.04.01.29	Cable S/FTP cat. 6a	m	265	1.20	318.00
5.4.02.04.01.30	Cable N2XH-J 3x2.5mm2	m	35	2.50	87.50
5.4.02.05	**Station dispatcher device Rumenka**				
5.4.02.05.01	**Material**				
5.4.02.05.01.01	45-pushbuttons console	pcs.		4,128.10	
5.4.02.05.01.02	Central deivce for 45- key console, 11 CB lines , 2 ATA connections 7 LB connections with 4 call selectors	pcs.		29,397.01	
5.4.02.05.01.03	Optical transmission deviced comprising optical tranceivers (II window - 1.320 nm), AD-Drop multiplexor, AD/DA converters and interfaces	pcs.		26,269.64	
5.4.02.05.01.04	4-wire command unit	pcs.		5,941.96	
5.4.02.05.01.05	4-wire selective translator with ca 11 CB connections	pcs.		11,008.23	
5.4.02.05.01.06	4-wire selective translator for electric traction dispatcher	pcs.		4,753.56	
5.4.02.05.01.07	Rectifier 230 V/24 V/10 A + sealed accu battery 24 V/120 Ah- poles pd floating potential	pcs.		1,876.41	
5.4.02.05.01.08	Feeding unit for powering station telephone cabinets (TUS,TIS) - connected to 24 V=	pcs.		875.66	
5.4.02.05.01.09	Two-way feeding unit for emote powering of ATB telephone cabinets - connected t0 24 V=	pcs.		875.66	
5.4.02.05.01.10	Transformer T2 600:1.200 Ω	pcs.		99.88	
5.4.02.05.01.11	Transformee T3 2.000:5.000 Ω	pcs.		187.65	
5.4.02.05.01.21	TK console for Station dispatching telephony system - touchcomputer and intercom based, built-in loudspeakers, goose-neck microphone, optional handset, line and PTT keys, dual Gigabit Ethernet interface	pcs.	1	9,753.17	9,753.17
5.4.02.05.01.22	Station dispatching telephony system server, 19" rack mount with IP PBX software for VoIP communication in Dispatcher and Track telephony systems over Gigabit Ethernet 1000Base-T port	pcs.	1	41,362.91	41,362.91

BILL OF QUANTITIES FOR PART-5, APPENDIX-1
NOVI SAD - SUBOTICA
BILL OF QUANTITY
BOOK 5.4
DISPATCHER SYSTEM - MATERIAL

5.4.02.05.01.23	Network equipment: - Redundant Layer 3 connectivity to the dedicated IP network for Dispatching and Track telephony system on this track section over OK1 and OK2 trackside fiber optic cables; 1000Base-LX 20km or 1000Base-EX 40km SFP ports for connections to the node of that network; 1000Base-T or 1000Base-T PoE ports for connections with TK console, Auxiliary phone, horn loudspeaker, LB telephones - Layer 2 connectivity with 6 telephones at the entry and 5 telephones at the exit signals over local fiber optic cables; 100Base-LX 10km or 1000Base-LX 10 km ports - Layer 2 connectivity to the ERPS G.8032 ring of Layer 2 switches on the interstation distance between Novi Sad and Rumenka stations over OK3 local fiber optic cable for connection with ATB phones and with LB and CB telephone in ETS Novi Sad; 1000Base-LX 20 km ports for these connections - Layer 2 connectivity to the ERPS G.8032 ring of Layer 2 switches on the interstation distance between Rumenka and Kisač stations over OK3 local fiber optic cable for connection with ATB phones; 1000Base-LX 20 km ports for these connections	set	1	21,880.00	21,880.00
5.4.02.05.01.24	19" standalone cabinet 42U/600x800mm with fiber optic and S/FTP patch panels, for installation of Station dispatching telephony system server and network active equipment as parts of Station dispatching telephony system. Corresponding fiber optic and S/FTP patch cables included.	set	1	3,963.00	3,963.00
5.4.02.05.01.25	Uninterruptible power supply system 2200VA 230VAC with battery charger and external ACCU VRLA battery set 48VDC 200Ah	set	1	3,890.00	3,890.00
5.4.02.05.01.26	AC/DC converters and protection equipment for 48VDC power distribution to station railway telephones	set	1	2,615.00	2,615.00
5.4.02.05.01.12	Set of tools, instruments and accessories and a compter with software	pcs.	1	2,501.88	2,501.88
5.4.02.05.01.13	Telephone at the entry signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	6	3,565.17	21,391.02
5.4.02.05.01.14	Telephone at the exit signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	5	3,440.08	17,200.40
5.4.02.05.01.15	Auxiliary SIP telephone 7-lines, Gigabit Ethernet interface for VoIP communication	pcs.	1	1,462.80	1,462.80
5.4.02 05.01.16	LB SIP telephone / wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	1	809.60	809.60
5.4.02 05.01.17	Loud tone bell	pcs.		375.36	
5.4.02.05.01.27	Outdoor SIP horn loudspeaker, Gigabit Ethernet interface for communication with station railway dispatching telephony system server, PoE or 24VDC power supply. Reproduction of predefined tone sequences, equivalent to departure ringing signals	pcs.	1	750.02	750.02
5.4.02.05.01.18	JH(St)H 2x2x0.8	m	60	1.20	72.00
5.4.02.05.01.19	JH(St)H 10x2x0.8	m			
5.4.02.05.01.20	JH(St)H 20x2x0.8	m			
5.4.02.05.01.28	Cable S/FTP cat. 6a	m	300	1.20	360.00
5.4.02.05.01.29	Cable N2XH-J 3x2.5mm2	m	35	2.50	87.50

BILL OF QUANTITIES FOR PART-5, APPENDIX-1
NOVI SAD - SUBOTICA
BILL OF QUANTITY
BOOK 5.4
DISPATCHER SYSTEM - MATERIAL

5.4.02.06	**Station dispatcher device Kisac**				
5.4.02.06.01	**Material**				
5.4.02.06.01.01	45-pushbuttons console	pcs.		4,128.10	
5.4.02.06.01.02	Central deivce for 45- key console, 11 CB lines , 2 ATA connections 7 LB connections with 4 call selectors	pcs.		29,397.01	
5.4.02.06.01.03	Optical transmission deviced comprising optical tranceivers (II window - 1.320 nm), AD-Drop multiplexor, AD/DA converters and interfaces	pcs.		26,269.64	
5.4.02.06.01.04	4-wire command unit	pcs.		5,941.96	
5.4.02.06.01.05	4-wire selective translator with ca 11 CB connections	pcs.		11,008.23	
5.4.02.06.01.06	4-wire selective translator for electric traction dispatcher	pcs.		4,753.56	
5.4.02.06.01.07	Rectifier 230 V/24 V/10 A + sealed accu battery 24 V/120 Ah- poles pd floating potential	pcs.		1,876.41	
5.4.02.06.01.08	Feeding unit for powering station telephone cabinets (TUS,TIS) - connected to 24 V=	pcs.		875.66	
5.4.02.06.01.09	Two-way feeding unit for emote powering of ATB telephone cabinets - connected t0 24 V=	pcs.		875.66	
5.4.02.06.01.10	Transformer T2 600:1.200 Ω	pcs.		99.88	
5.4.02.06.01.11	Transformee T3 2.000:5.000 Ω	pcs.		187.65	
5.4.02.06.01.22	TK console for Station dispatching telephony system - touchcomputer and intercom based, built-in loudspeakers, goose-neck microphone, optional handset, line and PTT keys, dual Gigabit Ethernet interface	pcs.	1	9,753.17	9,753.17
5.4.02.06.01.23	Station dispatching telephony system server, 19" rack mount with IP PBX software for VoIP communication in Dispatcher and Track telephony systems over Gigabit Ethernet 1000Base-T port	pcs.	1	41,362.91	41,362.91
5.4.02.06.01.24	Network equipment: - Redundant Layer 3 connectivity to the dedicated IP network for Dispatching and Track telephony system on this track section over OK1 and OK2 trackside fiber optic cables; 1000Base-LX 20km or 1000Base-EX 40km SFP ports for connections to the node of that network; 1000Base-T or 1000Base-T PoE ports for connections with TK console, Auxiliary phone, horn loudspeaker, LB telephones - Layer 2 connectivity with 4 telephones at the entry and 4 telephones at the exit signals over local fiber optic cables; 100Base-LX 10km or 1000Base-LX 10 km ports - Layer 2 connectivity to the ERPS G.8032 ring of Layer 2 switches on the interstation distance between Rumenka and Kisač station over OK3 local fiber optic cable for connection with ATB phones; 1000Base-LX 20 km ports for these connections - Layer 2 connectivity to the ERPS G.8032 ring of Layer 2 switches on the interstation distance between Kisač and Stepanovićevo station over OK3 local fiber optic cable for connection with ATB phones and with LB and CB telephone in TPS Kisač; 1000Base-LX 20 km ports for these connections	set	1	20,940.00	20,940.00

BILL OF QUANTITIES FOR PART-5, APPENDIX-1
NOVI SAD - SUBOTICA
BILL OF QUANTITY
BOOK 5.4
DISPATCHER SYSTEM - MATERIAL

5.4.02.06.01.25	19" standalone cabinet 42U/600x800mm with fiber optic and S/FTP patch panels, for installation of Station dispatching telephony system server and network active equipment as parts of Station dispatching telephony system. Corresponding fiber optic and S/FTP patch cables included.	set	1	3,963.00	3,963.00
5.4.02.06.01.26	Uninterruptible power supply system 2200VA 230VAC with battery charger and external ACCU VRLA battery set 48VDC 200Ah	set	1	3,890.00	3,890.00
5.4.02.06.01.27	AC/DC converters and protection equipment for 48VDC power distribution to station railway telephones and to the TPS Kisač facility	set	1	2,615.00	2,615.00
5.4.02.06.01.12	Set of tools, instruments and accessories and a compter with software	pcs.	1	2,501.88	2,501.88
5.4.02.06.01.13	Telephone at the entry signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	4	3,565.17	14,260.68
5.4.02.06.01.14	Telephone at the exit signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	4	3,440.08	13,760.32
5.4.02.06.01.15	Auxiliary SIP telephone 6-lines, Gigabit Ethernet interface for VoIP communication	pcs.	1	1,462.80	1,462.80
5.4.02.06.01.16	LB SIP telephone / wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	2	809.60	1,619.20
5.4.02.06.01.17	CB SIP telephone / wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	1	717.60	717.60
5.4.02.06.01.18	Loud tone bell	pcs.		375.36	
5.4.02.06.01.28	Outdoor SIP horn loudspeaker, Gigabit Ethernet interface for communication with station railway dispatching telephony system server, PoE or 24VDC power supply. Reproduction of predefined tone sequences, equivalent to departure ringing signals	pcs.	1	750.02	750.02
5.4.02.06.01.19	JH(St)H 2x2x0.8	m	35	1.20	42.00
5.4.02.06.01.20	JH(St)H 10x2x0.8	m			
5.4.02.06.01.21	JH(St)H 20x2x0.8	m			
5.4.02.06.01.29	Cable S/FTP cat. 6a	m	315	1.20	378.00
5.4.02.06.01.30	Cable N2XH-J 3x2.5mm2	m	45	2.50	112.50
5.4.02.07	**Station dispatcher device Stepanovicevo**				
5.4.02.07.01	**Material**				
5.4.02.07.01.01	45-pushbuttons console	pcs.		4,128.10	
5.4.02.07.01.02	Central deivce for 45- key console, 11 CB lines , 2 ATA connections 6 LB connections with 4 call selectors	pcs.		29,397.01	
5.4.02.07.01.03	Optical transmission deviced comprising optical tranceivers (II window - 1.320 nm), AD-Drop multiplexor, AD/DA converters and interfaces	pcs.		26,269.64	
5.4.02.07.01.04	4-wire command unit	pcs.		5,942.57	
5.4.02.07.01.05	4-wire selective translator with ca 11 CB connections	pcs.		10,727.20	
5.4.02.07.01.06	4-wire selective translator for electric traction dispatcher	pcs.		4,753.56	
5.4.02.07.01.07	Rectifier 230 V/24 V/10 A + sealed accu battery 24 V/120 Ah- poles pd floating potential	pcs.		1,876.41	
5.4.02.07.01.08	Feeding unit for powering station telephone cabinets (TUS,TIS) - connected to 24 V=	pcs.		875.66	
5.4.02.07.01.09	Two-way feeding unit for emote powering of ATB telephone cabinets - connected t0 24 V=	pcs.		875.66	
5.4.02.07.01.10	Transformer T2 600:1.200 Ω	pcs.		99.88	

BILL OF QUANTITIES FOR PART-5, APPENDIX-1 NOVI SAD - SUBOTICA BILL OF QUANTITY BOOK 5.4 DISPATCHER SYSTEM - MATERIAL					
5.4.02.07.01.11	Transformee T3 2.000:5.000 Ω	pcs.		187.65	
5.4.02.07.01.21	TK console for Station dispatching telephony system - touchcomputer and intercom based, built-in loudspeakers, goose-neck microphone, optional handset, line and PTT keys, dual Gigabit Ethernet interface	pcs.	1	9,753.17	9,753.17
5.4.02.07.01.22	Station dispatching telephony system server, 19" rack mount with IP PBX software for VoIP communication in Dispatcher and Track telephony systems over Gigabit Ethernet 1000Base-T port	pcs.	1	41,362.91	41,362.91
5.4.02.07.01.23	Network equipment: - Redundant Layer 3 connectivity to the dedicated IP network for Dispatching and Track telephony system on this track section over OK1 and OK2 trackside fiber optic cables; 1000Base-LX 20km or 1000Base-EX 40km SFP ports for connections to the node of that network; 1000Base-T or 1000Base-T PoE ports for connections with TK console, Auxiliary phone, horn loudspeaker, LB telephones - Layer 2 connectivity with 4 telephones at the entry and 4 telephones at the exit signals over local fiber optic cables; 100Base-LX 10km or 1000Base-LX 10 km ports - Layer 2 connectivity to the ERPS G.8032 ring of Layer 2 switches on the interstation distance between Kisač and Stepanovićevo stations over OK3 local fiber optic cable for connection with ATB phones and with LB and CB telephone in TPS Kisač; 1000Base-LX 20 km ports for these connections - Layer 2 connectivity to the ERPS G.8032 ring of Layer 2 switches on the interstation distance between Stepanovićevo and Zmajevo stations over OK3 local fiber optic cable for connection with ATB phones; 1000Base-LX 20 km ports for these connections	set	1	20,940.00	20,940.00
5.4.02.07.01.24	19" standalone cabinet 42U/600x800mm with fiber optic and S/FTP patch panels, for installation of Station dispatching telephony system server and network active equipment as parts of Station dispatching telephony system. Corresponding fiber optic and S/FTP patch cables included.	set	1	3,963.00	3,963.00
5.4.02.07.01.25	Uninterruptible power supply system 2200VA 230VAC with battery charger and external ACCU VRLA battery set 48VDC 200Ah	set	1	3,890.00	3,890.00
5.4.02.07.01.26	AC/DC converters and protection equipment for 48VDC power distribution to station railway telephones	set	1	2,615.00	2,615.00
5.4.02.07.01.12	Set of tools, instruments and accessories and a compter with software	pcs.	1	2,501.88	2,501.88
5.4.02.07.01.13	Telephone at the entry signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	4	3,565.17	14,260.68
5.4.02.07.01.14	Telephone at the exit signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	4	3,440.08	13,760.32
5.4.02.07.01.15	Auxiliary SIP telephone 7-lines, Gigabit Ethernet interface for VoIP communication	pcs.	1	1,462.80	1,462.80
5.4.02.06.01.16	LB SIP telephone / wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	1	809.60	809.60

BILL OF QUANTITIES FOR PART-5, APPENDIX-1 NOVI SAD - SUBOTICA BILL OF QUANTITY BOOK 5.4 DISPATCHER SYSTEM - MATERIAL					
5.4.02.06.01.17	Loud tone bell	pcs.		375.36	
5.4.02.07.01.27	Outdoor SIP horn loudspeaker, Gigabit Ethernet interface for communication with station railway dispatching telephony system server, PoE or 24VDC power supply. Reproduction of predefined tone sequences, equivalent to departure ringing signals	pcs.	1	750.02	750.02
5.4.02.07.01.18	JH(St)H 2x2x0.8	m	30	1.20	36.00
5.4.02.07.01.19	JH(St)H 10x2x0.8	m			
5.4.02.07.01.20	JH(St)H 20x2x0.8	m			
5.4.02.07.01.28	Cable S/FTP cat. 6a	m	230	1.20	276.00
5.4.02.07.01.29	Cable N2XH-J 3x2.5mm2	m	35	2.50	87.50
5.4.02.08	**Station dispatcher device Zmajevo**				
5.4.02.08.01	**Material**				
5.4.0208.01.01	45-pushbuttons console	pcs.		4,128.10	
5.4.0208.01.02	Central deivce for 45- key console, 8 CB lines , 2 ATA connections 6 LB connections with 4 call selectors	pcs.		29,397.01	
5.4.0208.01.03	Optical transmission deviced comprising optical tranceivers (II window - 1.320 nm), AD-Drop multiplexor, AD/DA converters and interfaces	pcs.		26,269.64	
5.4.0208.01.04	4-wire command unit	pcs.		5,942.57	
5.4.0208.01.05	4-wire selective translator with ca 8 CB connections	pcs.		8,776.80	
5.4.0208.01.06	4-wire selective translator for electric traction dispatcher	pcs.		4,753.56	
5.4.0208.01.07	Rectifier 230 V/24 V/10 A + sealed accu battery 24 V/120 Ah- poles pd floating potential	pcs.		1,876.41	
5.4.0208.01.08	Feeding unit for powering station telephone cabinets (TUS,TIS) - connected to 24 V=	pcs.		875.66	
5.4.0208.01.09	Two-way feeding unit for emote powering of ATB telephone cabinets - connected t0 24 V=	pcs.		875.66	
5.4.0208.01.10	Transformer T2 600:1.200 Ω	pcs.		99.88	
5.4.0208.01.11	Transformee T3 2.000:5.000 Ω	pcs.		187.65	
5.4.02.08.01.22	TK console for Station dispatching telephony system - touchcomputer and intercom based, built-in loudspeakers, goose-neck microphone, optional handset, line and PTT keys, dual Gigabit Ethernet interface	pcs.	1	9,753.17	9,753.17
5.4.02.08.01.23	Station dispatching telephony system server, 19" rack mount with IP PBX software for VoIP communication in Dispatcher and Track telephony systems over Gigabit Ethernet 1000Base-T port	pcs.	1	41,362.91	41,362.91

BILL OF QUANTITIES FOR PART-5, APPENDIX-1
NOVI SAD - SUBOTICA
BILL OF QUANTITY
BOOK 5.4
DISPATCHER SYSTEM - MATERIAL

5.4.02.08.01.24	Network equipment: - Redundant Layer 3 connectivity to the dedicated IP network for Dispatching and Track telephony system on this track section over OK1 and OK2 trackside fiber optic cables; 1000Base-LX 20km or 1000Base-EX 40km SFP ports for connections to the node of that network; 1000Base-T or 1000Base-T PoE ports for connections with TK console, Auxiliary phone, horn loudspeaker, LB telephones - Layer 2 connectivity with 4 telephones at the entry and 4 telephones at the exit signals over local fiber optic cables; 100Base-LX 10km or 1000Base-LX 10 km ports - Layer 2 connectivity to the ERPS G.8032 ring of Layer 2 switches on the interstation distance between Stepanovićevo and Zmajevo stations over OK3 local fiber optic cable for connection with ATB phones; 1000Base-LX 20 km ports for these connections - Layer 2 connectivity to the ERPS G.8032 ring of Layer 2 switches on the interstation distance between Zmajevo and Vrbas Novi stations over OK3 local fiber optic cable for connection with ATB phones and with LB and CB telephone in TPSn Zmajevo; 1000Base-LX 20 km ports for these connections	set	1	20,940.00	20,940.00
5.4.02.08.01.25	19" standalone cabinet 42U/600x800mm with fiber optic and S/FTP patch panels, for installation of Station dispatching telephony system server and network active equipment as parts of Station dispatching telephony system. Corresponding fiber optic and S/FTP patch cables included.	set	1	3,963.00	3,963.00
5.4.02.08.01.26	Uninterruptible power supply system 2200VA 230VAC with battery charger and external ACCU VRLA battery set 48VDC 200Ah	set	1	3,890.00	3,890.00
5.4.02.08.01.27	AC/DC converters and protection equipment for 48VDC power distribution to station railway telephones and to TPSn Zmajevo	set	1	2,615.00	2,615.00
5.4.0208.01.12	Set of tools, instruments and accessories and a compter with software	pcs.	1	2,501.88	2,501.88
5.4.0208.01.13	Telephone at the entry signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	4	3,565.17	14,260.68
5.4.0208.01.14	Telephone at the exit signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	4	3,440.08	13,760.32
5.4.0208.01.15	Auxiliary SIP telephone 7-lines, Gigabit Ethernet interface for VoIP communication	pcs.	1	1,462.80	1,462.80
5.4.02.06.01.16	LB SIP telephone / wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	2	809.60	1,619.20
5.4.02.06.01.17	CB SIP telephone / wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	1	717.60	717.60
5.4.02.06.01.18	Loud tone bell	pcs.		375.36	
5.4.02.08.01.28	Outdoor SIP horn loudspeaker, Gigabit Ethernet interface for communication with station railway dispatching telephony system server, PoE or 24VDC power supply. Reproduction of predefined tone sequences, equivalent to departure ringing signals	pcs.	1	750.02	750.02
5.4.02.08.01.19	JH(St)H 2x2x0.8	m	35	1.20	42.00

BILL OF QUANTITIES FOR PART-5, APPENDIX-1
NOVI SAD - SUBOTICA
BILL OF QUANTITY
BOOK 5.4
DISPATCHER SYSTEM - MATERIAL

5.4.02.08.01.20	JH(St)H 10x2x0.8	m			
5.4.02.08.01.21	JH(St)H 20x2x0.8	m			
5.4.02.08.01.29	Cable S/FTP cat. 6a	m	315	1.20	378.00
5.4.02.08.01.30	Cable N2XH-J 3x2.5mm2	m	45	2.50	112.50
5.4.02.09	**Station dispatcher device Vrbas Novi**				
5.4.02.09.01	**Material**				
5.4.02.09.01.01	80-pushbuttons console	pcs.		5,379.03	
5.4.02.09.01.02	Central deivce for 45- key console, 12 CB lines , 2 ATA connections 12 LB connections with 9 call selectors	pcs.		29,397.01	
5.4.02.09.01.03	Optical transmission deviced comprising optical tranceivers (II window - 1.320 nm), AD-Drop multiplexor, AD/DA converters and interfaces	pcs.		26,269.64	
5.4.02.09.01.04	4-wire command unit	pcs.		5,941.96	
5.4.02.09.01.05	4-wire selective translator with ca 12 CB connections	pcs.		11,008.23	
5.4.02.09.01.06	4-wire selective translator for electric traction dispatcher	pcs.		4,753.56	
5.4.02.09.01.07	Rectifier 230 V/24 V/10 A + sealed accu battery 24 V/120 Ah- poles pd floating potential	pcs.		1,876.41	
5.4.02.09.01.08	Feeding unit for powering station telephone cabinets (TUS,TIS) - connected to 24 V=	pcs.		875.66	
5.4.02.09.01.09	Two-way feeding unit for emote powering of ATB telephone cabinets - connected t0 24 V=	pcs.		875.66	
5.4.02.09.01.10	Transformer T2 600:1.200 Ω	pcs.		99.88	
5.4.02.09.01.11	Transformee T3 2.000:5.000 Ω	pcs.		187.65	
5.4.02.09.01.23	TK console for Station dispatching telephony system - touchcomputer and intercom based, built-in loudspeakers, goose-neck microphone, optional handset, line and PTT keys, dual Gigabit Ethernet interface	pcs.	1	9,753.17	9,753.17
5.4.02.09.01.24	Station dispatching telephony system server, 19" rack mount with IP PBX software for VoIP communication in Dispatcher and Track telephony systems over Gigabit Ethernet 1000Base-T port	pcs.	1	41,362.91	41,362.91
5.4.02.09.01.25	Network equipment: - Redundant Layer 3 connectivity to the dedicated IP network for Dispatching and Track telephony system on this track section over OK1 and OK2 trackside fiber optic cables; 1000Base-LX 20km or 1000Base-EX 40km SFP ports for connections to the node of that network; 1000Base-T or 1000Base-T PoE ports for connections with LB telephones - Layer 2 connectivity with 6 telephones at the entry and 6 telephones at the exit signals, TK console, Auxiliary phone and horn loudspeaker over local fiber optic cables; 100Base-LX 10km or 1000Base-LX 10 km ports - Layer 2 connectivity to the ERPS G.8032 ring of Layer 2 switches on the interstation distance between Zmajevo and Vrbas Novi stations over OK3 local fiber optic cable for connection with ATB phones and with LB and CB telephone in TPSn Zmajevo; 1000Base-LX 20 km ports for these connections - Layer 2 connectivity to the ERPS G.8032 ring of Layer 2 switches on the interstation distance between Vrbas Novi and Lovćenac stations over OK3 local fiber optic cable for connection with ATB phones and with LB and CB telephone in ETS Vrbas; 1000Base-LX 20 km ports for these connections	set	1	22,975.00	22,975.00

BILL OF QUANTITIES FOR PART-5, APPENDIX-1 NOVI SAD - SUBOTICA BILL OF QUANTITY BOOK 5.4 DISPATCHER SYSTEM - MATERIAL					
5.4.02.09.01.26	19" standalone cabinet 42U/600x800mm with fiber optic and S/FTP patch panels, for installation of Station dispatching telephony system server and network active equipment as parts of Station dispatching telephony system. Corresponding fiber optic and S/FTP patch cables included.	set	1	3,963.00	3,963.00
5.4.02.09.01.27	Uninterruptible power supply system 2200VA 230VAC with battery charger and external ACCU VRLA battery set 48VDC 200Ah	set	1	3,890.00	3,890.00
5.4.02.09.01.28	AC/DC converters and protection equipment for 48VDC power distribution to station railway telephones and to station building	set	1	2,615.00	2,615.00
5.4.02.09.01.12	Set of tools, instruments and accessories and a compter with software	pcs.	1	2,501.88	2,501.88
5.4.02.09.01.13	Telephone at the entry signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	6	3,566.15	21,396.90
5.4.02.09.01.14	Telephone at the exit signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	6	3,440.08	20,640.48
5.4.02.06.01.16	LB SIP telephone / wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	2	809.60	1,619.20
5.4.02.06.01.17	Loud tone bell	pcs.		375.36	
5.4.02.09.01.29	Outdoor SIP horn loudspeaker, Gigabit Ethernet interface for communication with station railway dispatching telephony system server, PoE or 24VDC power supply. Reproduction of predefined tone sequences, equivalent to departure ringing signals	pcs.	1	750.02	750.02
5.4.02.06.01.18	Auxiliary SIP telephone 7-lines, Gigabit Ethernet interface for VoIP communication	pcs.	1	1,462.80	1,462.80
5.4.02.06.01.19	Computer based 24 channel voice recorder	pcs.	1	30,840.70	30,840.70
5.4.02.09.01.20	JH(St)H 2x2x0.8	m	20	1.20	24.00
5.4.02.09.01.21	JH(St)H 10x2x0.8	m			
5.4.02.09.01.22	JH(St)H 20x2x0.8	m			
5.4.02.09.01.30	Cable S/FTP cat. 6a	m	150	1.20	180.00
5.4.02.09.01.31	Cable N2XH-J 3x2.5mm2	m	20	2.50	50.00
5.4.02.10	**Station dispatcher device Vrbas**				
5.4.02.10.01	**Material**				
5.4.02.10.01.01	27-pushbuttons console	pcs.		4,052.47	
5.4.02.10.01.02	Central deivce for 27- key console, 5 CB lines , 2 ATA connections 7 LB connections with 4 call selectors	pcs.		29,397.01	
5.4.02.10.01.03	Optical transmission deviced comprising optical tranceivers (II window - 1.320 nm), AD-Drop multiplexor, AD/DA converters and interfaces	pcs.		26,269.64	
5.4.02.10.01.04	4-wire command unit	pcs.			
5.4.02.10.01.05	4-wire selective translator with ca 5 CB connections	pcs.		6,046.24	
5.4.02.10.01.06	4-wire selective translator for electric traction dispatcher	pcs.		4,753.56	
5.4.02.10.01.07	Rectifier 230 V/24 V/10 A + sealed accu battery 24 V/120 Ah- poles pd floating potential	pcs.		1,876.41	
5.4.02.10.01.08	Feeding unit for powering station telephone cabinets (TUS,TIS) - connected to 24 V=	pcs.		875.66	
5.4.02.10.01.09	Two-way feeding unit for emote powering of ATB telephone cabinets - connected t0 24 V=	pcs.			
5.4.02.10.01.10	Transformer T2 600:1.200 Ω	pcs.		99.88	
5.4.02.10.01.11	Transformee T3 2.000:5.000 Ω	pcs.		187.65	

BILL OF QUANTITIES FOR PART-5, APPENDIX-1 NOVI SAD - SUBOTICA BILL OF QUANTITY BOOK 5.4 DISPATCHER SYSTEM - MATERIAL					
5.4.02.10.01.21	TK console for Station dispatching telephony system - touchcomputer and intercom based, built-in loudspeakers, goose-neck microphone, optional handset, line and PTT keys, dual Gigabit Ethernet interface	pcs.	1	9,753.17	9,753.17
5.4.02.10.01.22	Station dispatching telephony system server, 19" rack mount with IP PBX software for VoIP communication in Dispatcher and Track telephony systems over Gigabit Ethernet 1000Base-T port	pcs.	1	41,362.91	41,362.91
5.4.02.10.01.23	Network equipment: - Redundant Layer 3 connectivity to the dedicated IP network for Dispatching and Track telephony system on this track section over OK1 and OK2 trackside fiber optic cables; 1000Base-LX 20km or 1000Base-EX 40km SFP ports for connections to the node of that network; 1000Base-T or 1000Base-T PoE ports for connections with TK console, Auxiliary phone, horn loudspeaker andLB telephones - Layer 2 connectivity with 3 telephones at the entry and 2 telephones at the exit signalsover local fiber optic cables; 100Base-LX 10km or 1000Base-LX 10 km ports	set	1	17,420.00	17,420.00
5.4.02.10.01.24	19" standalone cabinet 42U/600x800mm with fiber optic and S/FTP patch panels, for installation of Station dispatching telephony system server and network active equipment as parts of Station dispatching telephony system. Corresponding fiber optic and S/FTP patch cables included.	set	1	3,963.00	3,963.00
5.4.02.10.01.25	Uninterruptible power supply system 2200VA 230VAC with battery charger and external ACCU VRLA battery set 48VDC 200Ah	set	1	3,890.00	3,890.00
5.4.02.10.01.26	AC/DC converters and protection equipment for 48VDC power distribution to station railway telephones	set	1	2,615.00	2,615.00
5.4.02.10.01.12	Set of tools, instruments and accessories and a compter with software	pcs.	1	2,501.88	2,501.88
5.4.02.10.01.13	Telephone at the entry signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	3	3,565.17	10,695.51
5.4.02.10.01.14	Telephone at the exit signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	2	3,440.08	6,880.16
5.4.02.10.01.15	Auxiliary SIP telephone 7-lines, Gigabit Ethernet interface for VoIP communication	pcs.	1	1,462.80	1,462.80
5.4.02.10.01.16	LB SIP telephone / wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	2	809.60	1,619.20
5.4.02.10.01.17	Loud tone bell	pcs.		375.36	
5.4.02.10.01.27	Outdoor SIP horn loudspeaker, Gigabit Ethernet interface for communication with station railway dispatching telephony system server, PoE or 24VDC power supply. Reproduction of predefined tone sequences, equivalent to departure ringing signals	pcs.	1	750.02	750.02
5.4.02.10.01.18	JH(St)H 2x2x0.8	m	35	1.20	42.00
5.4.02.10.01.19	JH(St)H 10x2x0.8	m			
5.4.02.10.01.20	JH(St)H 20x2x0.8	m			
5.4.02.10.01.28	Cable S/FTP cat. 6a	m	315	1.20	378.00
5.4.02.10.01.29	Cable N2XH-J 3x2.5mm2	m	45	2.50	112.50
5.4.02.11	**Station dispatcher device Lovcenac**				

BILL OF QUANTITIES FOR PART-5, APPENDIX-1
NOVI SAD - SUBOTICA
BILL OF QUANTITY
BOOK 5.4
DISPATCHER SYSTEM - MATERIAL

5.4.02.11.01	**Material**				
5.4.02.11.01.01	45-pushbuttons console	pcs.		4,128.10	
5.4.02.11.01.02	Central deivce for 45- key console, 8 CB lines , 2 ATA connections 6 LB connections with 4 call selectors	pcs.		29,397.01	
5.4.02.11.01.03	Optical transmission deviced comprising optical tranceivers (II window - 1.320 nm), AD-Drop multiplexor, AD/DA converters and interfaces	pcs.		26,269.64	
5.4.02.11.01.04	4-wire command unit	pcs.		5,942.57	
5.4.02.11.01.05	4-wire selective translator with ca 8 CB connections	pcs.		8,776.80	
5.4.02.11.01.06	4-wire selective translator for electric traction dispatcher	pcs.		4,753.56	
5.4.02.11.01.07	2/4wirw amplifier	kom.		3,127.34	
5.4.02.11.01.08	Pulse repeater 5027a	kom.		1,782.60	
5.4.02.11.01.09	Rectifier 230 V/24 V/10 A + sealed accu battery 24 V/120 Ah- poles pd floating potential	pcs.		1,876.41	
5.4.02.11.01.10	Feeding unit for powering station telephone cabinets (TUS,TIS) - connected to 24 V=	pcs.		875.66	
5.4.02.11.01.11	Two-way feeding unit for emote powering of ATB telephone cabinets - connected t0 24 V=	pcs.		875.66	
5.4.02.11.01.12	Transformer T2 600:1.200 Ω	pcs.		99.88	
5.4.02.11.01.13	Transformee T3 2.000:5.000 Ω	pcs.		187.65	
5.4.02.11.01.24	TK console for Station dispatching telephony system - touchcomputer and intercom based, built-in loudspeakers, goose-neck microphone, optional handset, line and PTT keys, dual Gigabit Ethernet interface	pcs.	1	9,753.17	9,753.17
5.4.02.11.01.25	Station dispatching telephony system server, 19" rack mount with IP PBX software for VoIP communication in Dispatcher and Track telephony systems over Gigabit Ethernet 1000Base-T port	pcs.	1	41,362.91	41,362.91
5.4.02.11.01.26	Network equipment: - Redundant Layer 3 connectivity to the dedicated IP network for Dispatching and Track telephony system on this track section over OK1 and OK2 trackside fiber optic cables; 1000Base-LX 20km or 1000Base-EX 40km SFP ports for connections to the node of that network; 1000Base-T or 1000Base-T PoE ports for connections with TK console, Auxiliary phone, horn loudspeaker, LB telephones - Layer 2 connectivity with 4 telephones at the entry and 4 telephones at the exit signals over local fiber optic cables; 100Base-LX 10km or 1000Base-LX 10 km ports - Layer 2 connectivity to the ERPS G.8032 ring of Layer 2 switches on the interstation distance between Vrbas Novi and Lovćenac stations over OK3 local fiber optic cable for connection with ATB phones and with LB and CB telephone in ETS Vrbas; 1000Base-LX 20 km ports for these connections - Layer 2 connectivity to the ERPS G.8032 ring of Layer 2 switches on the interstation distance between Lovćenac and Bačka Topola stations over OK3 local fiber optic cable for connection with ATB phones and with LB and CB telephone in TPS Lovćenac; 1000Base-LX 20 km ports for these connections	set	1	20,940.00	20,940.00

BILL OF QUANTITIES FOR PART-5, APPENDIX-1 NOVI SAD - SUBOTICA BILL OF QUANTITY BOOK 5.4 DISPATCHER SYSTEM - MATERIAL					
5.4.02.11.01.27	19" standalone cabinet 42U/600x800mm with fiber optic and S/FTP patch panels, for installation of Station dispatching telephony system server and network active equipment as parts of Station dispatching telephony system. Corresponding fiber optic and S/FTP patch cables included.	set	1	3,963.00	3,963.00
5.4.02.11.01.28	Uninterruptible power supply system 2200VA 230VAC with battery charger and external ACCU VRLA battery set 48VDC 200Ah	set	1	3,890.00	3,890.00
5.4.02.11.01.29	AC/DC converters and protection equipment for 48VDC power distribution to station railway telephones and to TPS Lovćenac	set	1	2,615.00	2,615.00
5.4.02.11.01.14	Set of tools, instruments and accessories and a compter with software	pcs.	1	2,501.88	2,501.88
5.4.02.11.01.15	Telephone at the entry signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	4	3,565.17	14,260.68
5.4.02.11.01.16	LB SIP telephone / wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	2	809.60	1,619.20
5.4.02.11.01.17	CB SIP telephone / wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	1	717.60	717.60
5.4.02.11.01.18	Loud tone bell	pcs.		375.36	
5.4.02.11.01.30	Outdoor SIP horn loudspeaker, Gigabit Ethernet interface for communication with station railway dispatching telephony system server, PoE or 24VDC power supply. Reproduction of predefined tone sequences, equivalent to departure ringing signals	pcs.	1	750.02	750.02
5.4.02.11.01.19	Telephone at the exit signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	4	3,440.08	13,760.32
5.4.02.11.01.20	Auxiliary SIP telephone 6-lines, Gigabit Ethernet interface for VoIP communication	pcs.	1	1,462.80	1,462.80
5.4.02.11.01.21	JH(St)H 2x2x0.8	m	30	1.20	36.00
5.4.02.11.01.22	JH(St)H 10x2x0.8	m			
5.4.02.11.01.23	JH(St)H 20x2x0.8	m			
5.4.02.11.01.31	Cable S/FTP cat. 6a	m	270	1.20	324.00
5.4.02.11.01.32	Cable N2XH-J 3x2.5mm2	m	35	2.50	87.50
5.4.02.12	**Station dispatcher device Backa Topola**				

BILL OF QUANTITIES FOR PART-5, APPENDIX-1
NOVI SAD - SUBOTICA
BILL OF QUANTITY
BOOK 5.4
DISPATCHER SYSTEM - MATERIAL

5.4.02.12.01	**Material**				
5.4.02.12.01.01	45-pushbuttons console	pcs.		4,128.02	
5.4.02.12.01.02	Central deivce for 45- key console, 8 CB lines , 2 ATA connections 6 LB connections with 4 call selectors	pcs.		29,397.01	
5.4.02.12.01.03	Optical transmission deviced comprising optical tranceivers (II window - 1.320 nm), AD-Drop multiplexor, AD/DA converters and interfaces	pcs.		26,269.64	
5.4.02.12.01.04	4-wire command unit	pcs.		5,942.57	
5.4.02.12.01.05	4-wire selective translator with ca 8 CB connections	pcs.		8,776.80	
5.4.02.12.01.06	4-wire selective translator for electric traction dispatcher	pcs.		4,753.56	
5.4.02.12.01.07	Rectifier 230 V/24 V/10 A + sealed accu battery 24 V/120 Ah- poles pd floating potential	pcs.		1,876.41	
5.4.02.12.01.08	Feeding unit for powering station telephone cabinets (TUS,TIS) - connected to 24 V=	pcs.		875.66	
5.4.02.12.01.09	Two-way feeding unit for emote powering of ATB telephone cabinets - connected t0 24 V=	pcs.		875.66	
5.4.02.12.01.10	Transformer T2 600:1.200 Ω	pcs.		99.88	
5.4.02.12.01.11	Transformee T3 2.000:5.000 Ω	pcs.		187.65	
5.4.02.12.01.22	TK console for Station dispatching telephony system - touchcomputer and intercom based, built-in loudspeakers, goose-neck microphone, optional handset, line and PTT keys, dual Gigabit Ethernet interface	pcs.	1	9,753.17	9,753.17
5.4.02.12.01.23	Station dispatching telephony system server, 19" rack mount with IP PBX software for VoIP communication in Dispatcher and Track telephony systems over Gigabit Ethernet 1000Base-T port	pcs.	1	41,362.91	41,362.91
5.4.02.12.01.24	Network equipment: - Redundant Layer 3 connectivity to the dedicated IP network for Dispatching and Track telephony system on this track section over OK1 and OK2 trackside fiber optic cables; 1000Base-LX 20km or 1000Base-EX 40km SFP ports for connections to the node of that network; 1000Base-T or 1000Base-T PoE ports for connections with LB telephones - Layer 2 connectivity with 4 telephones at the entry and 4 telephones at the exit signals, TK console, Auxiliary phone and horn loudspeaker over local fiber optic cables; 100Base-LX 10km or 1000Base-LX 10 km ports - Layer 2 connectivity to the ERPS G.8032 ring of Layer 2 switches on the interstation distance between Lovćenac and Bačka Topola stations over OK3 local fiber optic cable for connection with ATB phones and with LB and CB telephone in TPS Lovćenac; 1000Base-LX 20 km ports for these connections - Layer 2 connectivity to the ERPS G.8032 ring of Layer 2 switches on the interstation distance between Bačka Topola and Žednik stations over OK3 local fiber optic cable for connection with ATB phones and with LB and CB telephone in TPSn Bačka Topola; 1000Base-LX 20 km ports for these connections	set	1	22,035.00	22,035.00

BILL OF QUANTITIES FOR PART-5, APPENDIX-1 NOVI SAD - SUBOTICA BILL OF QUANTITY BOOK 5.4 DISPATCHER SYSTEM - MATERIAL					
5.4.02.12.01.25	19" standalone cabinet 42U/600x800mm with fiber optic and S/FTP patch panels, for installation of Station dispatching telephony system server and network active equipment as parts of Station dispatching telephony system. Corresponding fiber optic and S/FTP patch cables included.	set	1	3,963.00	3,963.00
5.4.02.12.01.26	Uninterruptible power supply system 2200VA 230VAC with battery charger and external ACCU VRLA battery set 48VDC 200Ah	set	1	3,890.00	3,890.00
5.4.02.12.01.27	AC/DC converters and protection equipment for 48VDC power distribution to station railway telephones, to station building and to TPSn Bačka Topola	set	1	2,615.00	2,615.00
5.4.02.12.01.12	Set of tools, instruments and accessories and a compter with software	pcs.	1	2,501.88	2,501.88
5.4.02.12.01.13	Telephone at the entry signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	4	3,565.17	14,260.68
5.4.02.12.01.14	Telephone at the exit signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	4	3,440.08	13,760.32
5.4.02.12.01.15	Auxiliary SIP telephone 6-lines, Gigabit Ethernet interface for VoIP communication	pcs.	1	1,462.80	1,462.80
5.4.02.12.01.16	LB SIP telephone / wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	2	809.60	1,619.20
5.4.02.12.01.17	CB SIP telephone / wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	1	717.60	717.60
5.4.02.12.01.18	Loud tone bell	pcs.		375.36	
5.4.02.12.01.28	Outdoor SIP horn loudspeaker, Gigabit Ethernet interface for communication with station railway dispatching telephony system server, PoE or 24VDC power supply. Reproduction of predefined tone sequences, equivalent to departure ringing signals	pcs.	1	750.02	750.02
5.4.02.12.01.19	JH(St)H 2x2x0.8	m	35	1.20	42.00
5.4.02.12.01.20	JH(St)H 10x2x0.8	m			
5.4.02.12.01.21	JH(St)H 20x2x0.8	m			
5.4.02.12.01.29	Cable S/FTP cat. 6a	m	270	1.20	324.00
5.4.02.12.01.30	Cable N2XH-J 3x2.5mm2	m	35	2.50	87.50
5.4.02.13	**Station dispatcher device Zednik**				
5.4.02.13.01	**Material**				
5.4.02.13.01.01	45-pushbuttons console	pcs.		4,128.10	
5.4.02.13.01.02	Central deivce for 45- key console, 8 CB lines , 2 ATA connections 6 LB connections with 4 call selectors	pcs.		29,396.43	
5.4.02.13.01.03	Optical transmission deviced comprising optical tranceivers (II window - 1.320 nm), AD-Drop multiplexor, AD/DA converters and interfaces	pcs.		26,269.64	
5.4.02.13.01.04	4-wire command unit	pcs.		5,942.57	
5.4.02.13.01.05	4-wire selective translator with ca 8 CB connections	pcs.		8,776.80	
5.4.02.13.01.06	4-wire selective translator for electric traction dispatcher	pcs.		4,753.56	
5.4.02.13.01.07	Rectifier 230 V/24 V/10 A + sealed accu battery 24 V/120 Ah- poles pd floating potential	pcs.		1,876.41	
5.4.02.13.01.08	Feeding unit for powering station telephone cabinets (TUS,TIS) - connected to 24 V=	pcs.		875.66	
5.4.02.13.01.09	Two-way feeding unit for emote powering of ATB telephone cabinets - connected t0 24 V=	pcs.		875.66	

BILL OF QUANTITIES FOR PART-5, APPENDIX-1 NOVI SAD - SUBOTICA BILL OF QUANTITY BOOK 5.4 DISPATCHER SYSTEM - MATERIAL					
5.4.02.13.01.10	Transformer T2 600:1.200 Ω	pcs.		100.37	
5.4.02.13.01.11	Transformee T3 2.000:5.000 Ω	pcs.		187.65	
5.4.02.13.01.22	TK console for Station dispatching telephony system - touchcomputer and intercom based, built-in loudspeakers, goose-neck microphone, optional handset, line and PTT keys, dual Gigabit Ethernet interface	pcs.	1	9,753.17	9,753.17
5.4.02.13.01.23	Station dispatching telephony system server, 19" rack mount with IP PBX software for VoIP communication in Dispatcher and Track telephony systems over Gigabit Ethernet 1000Base-T port	pcs.	1	41,362.91	41,362.91
5.4.02.13.01.24	Network equipment: - Redundant Layer 3 connectivity to the dedicated IP network for Dispatching and Track telephony system on this track section over OK1 and OK2 trackside fiber optic cables; 1000Base-LX 20km or 1000Base-EX 40km SFP ports for connections to the node of that network; 1000Base-T or 1000Base-T PoE ports for connections with TK console, Auxiliary phone, horn loudspeaker and LB telephones - Layer 2 connectivity with 4 telephones at the entry and 4 telephones at the exit signals over local fiber optic cables; 100Base-LX 10km or 1000Base-LX 10 km ports - Layer 2 connectivity to the ERPS G.8032 ring of Layer 2 switches on the interstation distance between Bačka Topola and Žednik stations over OK3 local fiber optic cable for connection with ATB phones and with LB and CB telephone in TPSn Bačka Topola; 1000Base-LX 20 km ports for these connections - Layer 2 connectivity to the ERPS G.8032 ring of Layer 2 switches on the interstation distance between Žednik and Naumovićevo stations over OK3 local fiber optic cable for connection with ATB phones and with LB and CB telephone in TPS Žednik; 1000Base-LX 20 km ports for these connections	set	1	20,940.00	20,940.00
5.4.02.13.01.25	19" standalone cabinet 42U/600x800mm with fiber optic and S/FTP patch panels, for installation of Station dispatching telephony system server and network active equipment as parts of Station dispatching telephony system. Corresponding fiber optic and S/FTP patch cables included.	set	1	3,963.00	3,963.00
5.4.02.13.01.26	Uninterruptible power supply system 2200VA 230VAC with battery charger and external ACCU VRLA battery set 48VDC 200Ah	set	1	3,890.00	3,890.00
5.4.02.13.01.27	AC/DC converters and protection equipment for 48VDC power distribution to station railway telephones, to station building and to TPS Žednik	set	1	2,615.00	2,615.00
5.4.02.13.01.12	Set of tools, instruments and accessories and a compter with software	pcs.	1	2,501.88	2,501.88
5.4.02.13.01.13	Telephone at the entry signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	4	3,565.17	14,260.68
5.4.02.13.01.14	Telephone at the exit signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	4	3,440.08	13,760.32

BILL OF QUANTITIES FOR PART-5, APPENDIX-1 NOVI SAD - SUBOTICA BILL OF QUANTITY BOOK 5.4 DISPATCHER SYSTEM - MATERIAL					
5.4.02.13.01.15	Auxiliary SIP telephone 7-lines, Gigabit Ethernet interface for VoIP communication	pcs.	1	1,462.80	1,462.80
5.4.02.12.01.16	LB SIP telephone / wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	2	809.60	1,619.20
5.4.02.13.01.17	CB SIP telephone / wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	1	717.60	717.60
5.4.02.13.01.17	Loud tone bell	pcs.		375.36	
5.4.02.13.01.28	Outdoor SIP horn loudspeaker, Gigabit Ethernet interface for communication with station railway dispatching telephony system server, PoE or 24VDC power supply. Reproduction of predefined tone sequences, equivalent to departure ringing signals	pcs.	1	750.02	750.02
5.4.02.13.01.19	JH(St)H 2x2x0.8	m	35	1.20	42.00
5.4.02.13.01.20	JH(St)H 10x2x0.8	m			
5.4.02.13.01.21	JH(St)H 20x2x0.8	m			
5.4.02.13.01.29	Cable S/FTP cat. 6a	m	315	1.20	378.00
5.4.02.13.01.30	Cable N2XH-J 3x2.5mm2	m	45	2.50	112.50
5.4.02.14	**Station dispatcher device Naumovicevo**				
5.4.02.14.01	**Material**				
5.4.02.14.01.01	45-pushbuttons console	pcs.		4,128.10	
5.4.02.14.01.02	Central deivce for 45- key console, 11 CB lines , 2 ATA connections 7 LB connections with 4 call selectors	pcs.		29,397.01	
5.4.02.14.01.03	Optical transmission deviced comprising optical tranceivers (II window - 1.320 nm), AD-Drop multiplexor, AD/DA converters and interfaces	pcs.		26,269.64	
5.4.02.14.01.04	4-wire command unit	pcs.		5,942.57	
5.4.02.14.01.05	4-wire selective translator with ca 11 CB connections	pcs.		10,727.20	
5.4.02.14.01.06	4-wire selective translator for electric traction dispatcher	pcs.		4,753.56	
5.4.02.14.01.07	Rectifier 230 V/24 V/10 A + sealed accu battery 24 V/120 Ah- poles pd floating potential	pcs.		1,876.41	
5.4.02.14.01.08	Feeding unit for powering station telephone cabinets (TUS,TIS) - connected to 24 V=	pcs.		875.66	
5.4.02.14.01.09	Two-way feeding unit for emote powering of ATB telephone cabinets - connected t0 24 V=	pcs.		875.66	
5.4.02.14.01.10	Transformer T2 600:1.200 Ω	pcs.		100.09	
5.4.02.14.01.11	Transformee T3 2.000:5.000 Ω	pcs.		187.65	
5.4.02.14.01.21	TK console for Station dispatching telephony system - touchcomputer and intercom based, built-in loudspeakers, goose-neck microphone, optional handset, line and PTT keys, dual Gigabit Ethernet interface	pcs.	1	9,753.17	9,753.17
5.4.02.14.01.22	Station dispatching telephony system server, 19" rack mount with IP PBX software for VoIP communication in Dispatcher and Track telephony systems over Gigabit Ethernet 1000Base-T port	pcs.	1	41,362.91	41,362.91

BILL OF QUANTITIES FOR PART-5, APPENDIX-1
NOVI SAD - SUBOTICA
BILL OF QUANTITY
BOOK 5.4
DISPATCHER SYSTEM - MATERIAL

5.4.02.14.01.23	Network equipment: - Redundant Layer 3 connectivity to the dedicated IP network for Dispatching and Track telephony system on this track section over OK1 and OK2 trackside fiber optic cables; 1000Base-LX 20km or 1000Base-EX 40km SFP ports for connections to the node of that network; 1000Base-T or 1000Base-T PoE ports for connections with TK console, Auxiliary phone, horn loudspeaker and LB telephones - Layer 2 connectivity with 5 telephones at the entry and 6 telephones at the exit signals over local fiber optic cables; 100Base-LX 10km or 1000Base-LX 10 km ports - Layer 2 connectivity to the ERPS G.8032 ring of Layer 2 switches on the interstation distance between Žednik and Naumovićevo stations over OK3 local fiber optic cable for connection with ATB phones and with LB and CB telephone in TPS Žednik; 1000Base-LX 20 km ports for these connections - Layer 2 connectivity to the ERPS G.8032 ring of Layer 2 switches on the interstation distance between Naumovićevo and Subotica stations over OK3 local fiber optic cable for connection with ATB phones, with LB and CB telephone in ETS Subotica, with LB and CB telephone in TPS Subotica and with LB and CB telephone in TPSn State border (Kelebija); 1000Base-LX 20 km ports or 1000Base-ZX for these connections	set	1	21,880.00	21,880.00
5.4.02.14.01.24	19" standalone cabinet 42U/600x800mm with fiber optic and S/FTP patch panels, for installation of Station dispatching telephony system server and network active equipment as parts of Station dispatching telephony system. Corresponding fiber optic and S/FTP patch cables included.	set	1	3,963.00	3,963.00
5.4.02.14.01.25	Uninterruptible power supply system 2200VA 230VAC with battery charger and external ACCU VRLA battery set 48VDC 200Ah	set	1	3,890.00	3,890.00
5.4.02.14.01.26	AC/DC converters and protection equipment for 48VDC power distribution to station railway telephones	set	1	2,615.00	2,615.00
5.4.02.14.01.12	Set of tools, instruments and accessories and a compter with software	pcs.	1	2,501.88	2,501.88
5.4.02.14.01.13	Telephone at the entry signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	5	3,565.17	17,825.85
5.4.02.14.01.14	Telephone at the exit signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	6	3,440.08	20,640.48
5.4.02.14.01.15	Auxiliary SIP telephone 7-lines, Gigabit Ethernet interface for VoIP communication	pcs.	1	1,462.80	1,462.80
5.4.02.14.01.16	LB SIP telephone / wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	1	809.60	809.60
5.4.02.14.01.17	Loud tone bell	pcs.		375.36	
5.4.02.14.01.27	Outdoor SIP horn loudspeaker, Gigabit Ethernet interface for communication with station railway dispatching telephony system server, PoE or 24VDC power supply. Reproduction of predefined tone sequences, equivalent to departure ringing signals	pcs.	1	750.02	750.02
5.4.02.14.01.18	JH(St)H 2x2x0.8	m	100	1.20	120.00

BILL OF QUANTITIES FOR PART-5, APPENDIX-1
NOVI SAD - SUBOTICA
BILL OF QUANTITY
BOOK 5.4
DISPATCHER SYSTEM - MATERIAL

5.4.02.14.01.19	JH(St)H 10x2x0.8	m			
5.4.02.14.01.20	JH(St)H 20x2x0.8	m			
5.4.02.14.01.28	Cable S/FTP cat. 6a	m	460	1.20	552.00
5.4.02.14.01.29	Cable N2XH-J 3x2.5mm2	m	60	2.50	150.00
5.4.02.15	**Station dispatcher device Subotica**				
5.4.02.15.01	**Material**				
5.4.02.15.01.01	80-pushbuttons console	pcs.		5,379.03	
5.4.02.15.01.02	Central deivce for 80- key console, 30 CB lines , 2 ATA connections 13 LB connections with 9 call selectors	pcs.		29,397.01	
5.4.02.15.01.03	Optical transmission deviced comprising optical tranceivers (II window - 1.320 nm), AD-Drop multiplexor, AD/DA converters and interfaces	pcs.		26,269.64	
5.4.02.15.01.04	4-wire command unit	pcs.		5,941.96	
5.4.02.15.01.05	4-wire selective translator with ca 17 CB connections	pcs.		13,320.26	
5.4.02.15.01.06	4-wire selective translator with ca 33 CB connections	pcs.		11,702.40	
5.4.02.15.01.07	4-wire selective translator for electric traction dispatcher	pcs.		4,753.56	
5.4.02.15.01.08	Rectifier 230 V/24 V/10 A + sealed accu battery 24 V/120 Ah- poles pd floating potential	pcs.		1,876.41	
5.4.02.15.01.09	Feeding unit for powering station telephone cabinets (TUS,TIS) - connected to 24 V=	pcs.		875.66	
5.4.02.15.01.10	Two-way feeding unit for emote powering of ATB telephone cabinets - connected t0 24 V=	pcs.		875.66	
5.4.02.15.01.11	Transformer T2 600:1.200 Ω	pcs.		99.88	
5.4.02.15.01.12	Transformee T3 2.000:5.000 Ω	pcs.		187.65	
5.4.02.15.01.27	TK console for Station dispatching telephony system - touchcomputer and intercom based, built-in loudspeakers, goose-neck microphone, optional handset, line and PTT keys, dual Gigabit Ethernet interface	pcs.	1	9,753.17	9,753.17
5.4.02.15.01.28	Station dispatching telephony system server, 19" rack mount with IP PBX software for VoIP communication in Dispatcher and Track telephony systems over Gigabit Ethernet 1000Base-T port	pcs.	1	41,362.91	41,362.91
5.4.02.15.01.29	Network equipment: - Redundant Layer 3 connectivity to the dedicated IP network for Dispatching and Track telephony system on this track section over OK1 and OK2 trackside fiber optic cables; 1000Base-LX 20km or 1000Base-EX 40km SFP ports for connections to the node of that network; 1000Base-T or 1000Base-T PoE ports for connections with TK console, Auxiliary phone, horn loudspeaker and LB telephones - Layer 2 connectivity with 8 telephones at the entry and 22 telephones at the exit signals, telephones at the freight station and at the external station dispatcher over local fiber optic cables; 100Base-LX 10km or 1000Base-LX 10 km ports - Layer 2 connectivity to the ERPS G.8032 ring of Layer 2 switches on the interstation distance between Naumovićevo and Subotica stations over OK3 local fiber optic cable for connection with ATB phones, with LB and CB telephone in EPS Subotica, with LB and CB telephone in TPS Subotica and with LB and CB telephone in TPSn State border (Kelebija); 1000Base-LX 20 km or 1000Base-ZX ports for these connections	set	1	24,730.00	24,730.00

BILL OF QUANTITIES FOR PART-5, APPENDIX-1 NOVI SAD - SUBOTICA BILL OF QUANTITY BOOK 5.4 DISPATCHER SYSTEM - MATERIAL					
5.4.02.15.01.30	19" standalone cabinet 42U/600x800mm with fiber optic and S/FTP patch panels, for installation of Station dispatching telephony system server and network active equipment as parts of Station dispatching telephony system. Corresponding fiber optic and S/FTP patch cables included.	set	1	3,963.00	3,963.00
5.4.02.15.01.31	Uninterruptible power supply system 2200VA 230VAC with battery charger and external ACCU VRLA battery set 48VDC 200Ah	set	1	3,890.00	3,890.00
5.4.02.15.01.32	AC/DC converters and protection equipment for 48VDC power distribution to station railway telephones, freight station, external station dispatcher, RKM and TPS Subotica	set	1	2,615.00	2,615.00
5.4.02.15.01.13	Set of tools, instruments and accessories and a compter with software	pcs.	1	2,501.88	2,501.88
5.4.02.15.01.14	Telephone at the entry signal to be mounted on the signal post, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication	pcs.	8	3,565.17	28,521.36
5.4.02.15.01.15	Telephone at the exit signal to be mounted on the signal post containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication (5 exit signal telephones functioning as entry signal telephones)	pcs.	22	3,440.08	75,681.76
5.4.02.15.01.16	LB SIP telephone / wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	3	809.60	2,428.80
5.4.02.15.01.17	LB SIP telephone / desk top, Gigabit Ethernet interface for VoIP communication	pcs.	1	809.60	809.60
5.4.02.15.01.18	CB SIP telephone / wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	1	717.60	717.60
5.4.02.15.01.19	CB SIP telephone / desk top, Gigabit Ethernet interface for VoIP communication	pcs.	2	717.60	1,435.20
5.4.02.15.01.20	Loud tone bell	pcs.		375.36	
5.4.02.15.01.33	Outdoor SIP horn loudspeaker, Gigabit Ethernet interface for communication with station railway dispatching telephony system server, PoE or 24VDC power supply. Reproduction of predefined tone sequences, equivalent to departure ringing signals	pcs.	1	750.02	750.02
5.4.02.15.01.21	Auxiliary SIP telephone 12-lines, Gigabit Ethernet interface for VoIP communication	pcs.	1	1,560.32	1,560.32
5.4.02.15.01.22	24 channel voice recorder, computer based	pcs.	1	30,840.70	30,840.70
5.4.02.15.01.23	Reduced version of the station device with console, central unit and power supply - for the external station dispatcher and the dispatcher of the freight station: - Indoor wallmount cabinet with DC and AC terminal blocks, fiber optic splice box with adapters, RJ-45 modules and corresponding fiber optic and S/FTP patch cables included. - Layer 2 switch (1x1000Base-LX 20km SFP module, min. 6x1000Base-T PoE ports, 48VDC power supply)	pcs.	2	29,256.00	58,512.00
5.4.02.15.01.24	JH(St)H 2x2x0.8	m	90	1.20	108.00
5.4.02.15.01.25	JH(St)H 10x2x0.8	m			
5.4.02.15.01.26	JH(St)H 20x2x0.8	m			
5.4.02.15.01.34	Cable S/FTP cat. 6a	m	660	1.20	792.00
5.4.02.15.01.35	Cable N2XH-J 3x2.5mm2	m	40	2.50	100.00
5.4.02.16	**Border hut + border SPN**				
5.4.02.16.01	**Material**				
5.4.02.16.01.01	27-pushbuttons console	KOM.		4,052.47	

BILL OF QUANTITIES FOR PART-5, APPENDIX-1 NOVI SAD - SUBOTICA BILL OF QUANTITY BOOK 5.4 DISPATCHER SYSTEM - MATERIAL					
5.4.02.16.01.02	,Central deivce for 27- key console, 1 CB lines, 5 LB connections with 3 call selectors	ком.		29,397.01	
5.4.02.16.01.03	Optical transmission deviced comprising optical tranceivers (II window - 1.320 nm), AD-Drop multiplexor, AD/DA converters and interfaces	ком		26,269.64	
5.4.02.16.01.04	4-wire selective translator for electric traction dispatcher	ком.		4,753.56	
5.4.02.16.01.05	Indoor cable terminal box KG 10×2 with fuses KG 10×2 with fastening accessories for installation in the border hut	ком.		146.28	
5.4.02.16.01.06	Installation gear in the border SPN for installation of a cable twrminal box with fuses and transfprmer	ком.		975.20	
5.4.02.16.01.07	Indoor cable terminal box KG 10×2 with fuses KG 10×2	ком.		105.01	
5.4.02.16.01.08	Transformer T2 600:1.200 Ω	ком.		99.88	
5.4.02.16.01.14	TK console for Station dispatching telephony system - touchcomputer and intercom based, built-in loudspeakers, goose-neck microphone, optional handset, line and PTT keys, dual Gigabit Ethernet interface	pcs.	1	9,753.17	9,753.17
5.4.02.16.01.15	Station dispatching telephony system server, 19" rack mount with IP PBX software for VoIP communication in Dispatcher and Track telephony systems over Gigabit Ethernet 1000Base-T port	pcs.	1	41,362.91	41,362.91
5.4.02.16.01.16	Network equipment: - Redundant Layer 3 connectivity to the dedicated IP network for Dispatching and Track telephony system on this track section over OK1 and OK2 trackside fiber optic cables; 1000Base-LX 20km or 1000Base-EX 40km SFP ports for connections to the node of that network; 1000Base-T or 1000Base-T PoE ports for connections with TK console and horn loudspeaker - Layer 2 connectivity to the ERPS G.8032 ring of Layer 2 switches on the interstation distance between Naumovićevo and Subotica stations over OK3 local fiber optic cable for connection with ATB phones, with LB and CB telephone in EPS Subotica, with LB and CB telephone in TPS Subotica and with LB and CB telephone in border TPSn; 1000Base-LX 20 km or 1000Base-ZX ports for these connections	set	1	17,760.00	17,760.00
5.4.02.16.01.17	19" standalone cabinet 42U/600x800mm with fiber optic and S/FTP patch panels, for installation of Station dispatching telephony system server and network active equipment as parts of Station dispatching telephony system and power supply equipment. Corresponding fiber optic and S/FTP patch cables included.	set	1	3,963.00	3,963.00
5.4.02.16.01.18	Uninterruptible power supply system 2200VA 230VAC with battery charger and external ACCU VRLA battery set 48VDC 200Ah	set	1	3,890.00	3,890.00
5.4.02.16.01.19	AC/DC converters and protection equipment for 48VDC power distribution to border TPSn	set	1	2,615.00	2,615.00
5.4.02.16.01.20	Indoor wallmount cabinet with DC terminal blocks, RJ-45 modules and corresponding fiber optic and S/FTP patch cables included.	set	1	1,412.00	1,412.00
5.4.02.16.01.21	Equipment for installation in indoor wallmount cabinet: Layer 2 switch (2x1000Base-LX 20km SFP modules, min. 4x1000Base-T PoE ports, ERPS ITU-T G.8032 support, 48VDC power supply)	set	1	1,684.00	1,684.00

BILL OF QUANTITIES FOR PART-5, APPENDIX-1 NOVI SAD - SUBOTICA BILL OF QUANTITY BOOK 5.4 DISPATCHER SYSTEM - MATERIAL					
5.4.02.16.01.09	Loud tone bell to be monted on the wall of the border hut	ком.		375.28	
5.4.02.16.01.22	Outdoor SIP horn loudspeaker, Gigabit Ethernet interface for communication with station railway dispatching telephony system server, PoE or 24VDC power supply. Reproduction of predefined tone sequences, equivalent to departure ringing signals	pcs.	1	750.02	750.02
5.4.02.16.01.10	LB SIP telephone / wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	1	809.60	809.60
5.4.02.16.01.11	CB SIP telephone / wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	1	717.60	717.60
5.4.02.16.01.12	Cable PP 41 2×2,5 mm^2	m	60	2.34	140.40
5.4.02.16.01.13	Cable TK 39 P 3x4x0,8	m	60	1.88	112.80
5.4.02.17	**ATB telephones Novi Sad ß Subotica**				
5.4.17-1	**Subsection Novi Sad - Rumenka**				
5.4.17-1.01	**Material**				
5.4.17-1.01.01	ATB telephone to be mounted on the signal pole, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication. Fiber optic patch cable included.	pcs.	8	7,505.62	60,044.96
5.4.17-1.01.02	Cabinet comprising the cable terminal box KG 30×2 and cable strips with foundation, complete with earthing strand for connection to the closer rail L=5 m/95 mm2, with eyelet Ø10 mm	pcs.		1,287.26	
5.4.17-1.01.03	Cable terminal box KG 30×2	pcs.		218.33	
5.4.17-1.01.04	Strip 10×2 for gel filled cables	pcs.		40.72	
5.4.17-1.01.08	Cabinet with foundation, complete with earthing strand for connection to the closer rail FeZn 95 mm^2, L = 5 m with eyelet Ø10 mm. Containing terminal blocks for AC power cable termination, terminal blocks for termination of a DC power cable for 4 ATB telephones, set of 5 pcs. of fiber optic splice boxes with adapters for fiber termination, 230VAC/ 48VDC converter and protection equipment. Corresponding fiber optic patch cables included.	set	2	2,954.00	5,908.00
5.4.17-1.01.09	Industrial Layer 2 switch, min. 6 100/1000Base-X SFP ports, 4x100Base-LX 10km SFP Modules, 2x1000Base-LX 20km SFP Modules uplinks, extended temperature range, ERPS (ITU-T G.8032) support, DC power supply.	pcs.	2	1,594.00	3,188.00
5.4.17-1.01.07	Thermoshrinking joint to connect the branch cable of the existing line side cable with the cable TK 59 M 10x4x0,8	pcs.		202.84	
5.4.17-1.01.10	Optical branch joint (for latancy splices) to connect the branch optic cable 6x9/125um to the OK3 optic cable	pcs.	2	112.00	224.00
5.4.17-1.01.11	Cable XP 41 2x2,5mm2	m	45		
5.4.17-1.01.12	Cable TK 59 M 1x4x0,8	m	610		
5.4.17-1.01.13	Fiber optic cable 6x9/125µm G.567.A1	m	900		
5.4.17-2	**Subsection Rumenka - Kisač**				
5.4.17-2.01	**Material**				
5.4.17-2.01.01	ATB telephone to be mounted on the signal pole, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication. Fiber optic patch cable included.	pcs.	8	7,505.62	60,044.96

BILL OF QUANTITIES FOR PART-5, APPENDIX-1
NOVI SAD - SUBOTICA
BILL OF QUANTITY
BOOK 5.4
DISPATCHER SYSTEM - MATERIAL

5.4.17-2.01.02	Cabinet comprising the cable terminal box KG 30×2 and cable strips with foundation, complete with earthing strand for connection to the closer rail L=5 m/95 mm2, with eyelet Ø10 mm	pcs.		1,287.26	
5.4.17-2.01.03	Cable terminal box KG 30×2	pcs.		218.33	
5.4.17-2.01.04	Strip 10×2 for gel filled cables	pcs.		40.72	
5.4.17-2.01.08	Cabinet with foundation, complete with earthing strand for connection to the closer rail FeZn 95 mm^2, L = 5 m with eyelet Ø10 mm. Containing terminal blocks for AC power cable termination, terminal blocks for termination of a DC power cable for 4 ATB telephones, set of 5 pcs. of fiber optic splice boxes with adapters for fiber termination, 230VAC/ 48VDC converter and protection equipment. Corresponding fiber optic patch cables included.	set	2	2,954.00	5,908.00
5.4.17-2.01.09	Industrial Layer 2 switch, min. 6 100/1000Base-X SFP ports, 4x100Base-LX 10km SFP Modules, 2x1000Base-LX 20km SFP Modules uplinks, extended temperature range, ERPS (ITU-T G.8032) support, DC power supply.	pcs.	2	1,594.00	3,188.00
5.4.17-2.01.07	Thermoshrinking joint to connect the branch cable of the existing line side cable with the cable TK 59 M 10x4x0,8	pcs.		202.84	
5.4.17-2.01.10	Optical branch joint (for latancy splices) to connect the branch optic cable 6x9/125um to the OK3 optic cable	pcs.	2	112.00	224.00
5.4.17-2.01.11	Cable XP 41 2x2,5mm2	m	20		
5.4.17-2.01.12	Cable TK 59 M 1x4x0,8	m	600		
5.4.17-2.01.13	Fiber optic cable 6x9/125μm G.567.A1	m	710		
5.4.17-3	**Subsection Kisač - Stepanovićevo**				
5.4.17-3.01	**Material**				
5.4.17-3.01.01	ATB telephone to be mounted on the signal pole, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication. Fiber optic patch cable included.	pcs.	8	7,505.62	60,044.96
5.4.17-3.01.02	Cabinet comprising the cable terminal box KG 30×2 and cable strips with foundation, complete with earthing strand for connection to the closer rail L=5 m/95 mm2, with eyelet Ø10 mm	pcs.		1,287.26	
5.4.17-3.01.03	Cable terminal box KG 30×2	pcs.		218.33	
5.4.17-3.01.04	Strip 10×2 for gel filled cables	pcs.		40.72	
5.4.17-3.01.08	Cabinet with foundation, complete with earthing strand for connection to the closer rail FeZn 95 mm^2, L = 5 m with eyelet Ø10 mm. Containing terminal blocks for AC power cable termination, terminal blocks for termination of a DC power cable for 4 ATB telephones, set of 5 pcs. of fiber optic splice boxes with adapters for fiber termination, 230VAC/ 48VDC converter and protection equipment. Corresponding fiber optic patch cables included.	set	2	2,954.00	5,908.00
5.4.17-3.01.09	Industrial Layer 2 switch, min. 6 100/1000Base-X SFP ports, 4x100Base-LX 10km SFP Modules, 2x1000Base-LX 20km SFP Modules uplinks, extended temperature range, ERPS (ITU-T G.8032) support, DC power supply.	pcs.	2	1,594.00	3,188.00
5.4.17-3.01.07	Thermoshrinking joint to connect the branch cable of the existing line side cable with the cable TK 59 M 10x4x0,8	pcs.		202.84	
5.4.17-3.01.10	Optical branch joint (for latancy splices) to connect the branch optic cable 6x9/125um to the OK3 optic cable	pcs.	2	112.00	224.00

BILL OF QUANTITIES FOR PART-5, APPENDIX-1
NOVI SAD - SUBOTICA
BILL OF QUANTITY
BOOK 5.4
DISPATCHER SYSTEM - MATERIAL

5.4.17-3.01.11	Cable XP 41 2x2,5mm2	m	20		
5.4.17-3.01.12	Cable TK 59 M 1x4x0,8	m	600		
5.4.17-3.01.13	Fiber optic cable 6x9/125µm G.567.A1	m	710		
5.4.17-4	**Subsection Stepanovićevo - Zmajevo**				
5.4.17-4.01	**Material**				
5.4.17-4.01.01	ATB telephone to be mounted on the signal pole, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication. Fiber optic patch cable included.	pcs.	4	7,505.62	30,022.48
5.4.17-4.01.02	Cabinet comprising the cable terminal box KG 30×2 and cable strips with foundation, complete with earthing strand for connection to the closer rail L=5 m/95 mm2, with eyelet Ø10 mm	pcs.		1,287.26	
5.4.17-4.01.03	Cable terminal box KG 30×2	pcs.		218.33	
5.4.17-4.01.04	Strip 10×2 for gel filled cables	pcs.		40.72	
5.4.17-4.01.08	Cabinet with foundation, complete with earthing strand for connection to the closer rail FeZn 95 mm^2, L = 5 m with eyelet Ø10 mm. Containing terminal blocks for AC power cable termination, terminal blocks for termination of a DC power cable for 4 ATB telephones, set of 5 pcs. of fiber optic splice boxes with adapters for fiber termination, 230VAC/ 48VDC converter and protection equipment. Corresponding fiber optic patch cables included.	set	1	2,954.00	2,954.00
5.4.17-4.01.09	Industrial Layer 2 switch, min. 6 100/1000Base-X SFP ports, 4x100Base-LX 10km SFP Modules, 2x1000Base-LX 20km SFP Modules uplinks, extended temperature range, ERPS (ITU-T G.8032) support, DC power supply.	pcs.	1	1,594.00	1,594.00
5.4.17-4.01.07	Thermoshrinking joint to connect the branch cable of the existing line side cable with the cable TK 59 M 10x4x0,8	pcs.		202.84	
5.4.17-4.01.10	Optical branch joint (for latancy splices) to connect the branch optic cable 6x9/125um to the OK3 optic cable	pcs.	1	112.00	112.00
5.4.17-4.01.11	Cable XP 41 2x2,5mm2	m	10		
5.4.17-4.01.12	Cable TK 59 M 1x4x0,8	m	300		
5.4.17-4.01.13	Fiber optic cable 6x9/125µm G.567.A1	m	355		
5.4.17-5	**Subsection Zmajevo - Vrbas Nova**				
5.4.17-5.01	**Material**				
5.4.17-5.01.01	ATB telephone to be mounted on the signal pole, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication. Fiber optic patch cable included.	pcs.	16	7,505.62	120,089.92
5.4.17-5.01.02	Cabinet comprising the cable terminal box KG 30×2 and cable strips with foundation, complete with earthing strand for connection to the closer rail L=5 m/95 mm2, with eyelet Ø10 mm	pcs.		1,287.26	
5.4.17-5.01.03	Cable terminal box KG 30×2	pcs.		218.33	
5.4.17-5.01.04	Strip 10×2 for gel filled cables	pcs.		40.72	
5.4.17-5.01.08	Cabinet with foundation, complete with earthing strand for connection to the closer rail FeZn 95 mm^2, L = 5 m with eyelet Ø10 mm. Containing terminal blocks for AC power cable termination, terminal blocks for termination of a DC power cable for 4 ATB telephones, set of 5 pcs. of fiber optic splice boxes with adapters for fiber termination, 230VAC/ 48VDC converter and protection equipment. Corresponding fiber optic patch cables included.	set	4	2,954.00	11,816.00

BILL OF QUANTITIES FOR PART-5, APPENDIX-1
NOVI SAD - SUBOTICA
BILL OF QUANTITY
BOOK 5.4
DISPATCHER SYSTEM - MATERIAL

5.4.17-5.01.09	Industrial Layer 2 switch, min. 6 100/1000Base-X SFP ports, 4x100Base-LX 10km SFP Modules, 2x1000Base-LX 20km SFP Modules uplinks, extended temperature range, ERPS (ITU-T G.8032) support, DC power supply.	pcs.	4	1,594.00	6,376.00
5.4.17-5.01.07	Thermoshrinking joint to connect the branch cable of the existing line side cable with the cable TK 59 M 10x4x0,8	pcs.		202.84	
5.4.17-5.01.10	Optical branch joint (for latancy splices) to connect the branch optic cable 6x9/125um to the OK3 optic cable	pcs.	4	112.00	448.00
5.4.17-5.01.11	Cable XP 41 2x2,5mm2	m	40		
5.4.17-5.01.12	Cable TK 59 M 1x4x0,8	m	1,200		
5.4.17-5.01.13	Fiber optic cable 6x9/125μm G.567.A1	m	1,420		
5.4.17-6	**Subsection Vrbas Nova - Lovćenac-Mali Iđoš**				
5.4.17-6.01	**Material**				
5.4.17-6.01.01	ATB telephone to be mounted on the signal pole, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication. Fiber optic patch cable included.	pcs.	24	7,505.62	180,134.88
5.4.17-6.01.02	Cabinet comprising the cable terminal box KG 30×2 and cable strips with foundation, complete with earthing strand for connection to the closer rail L=5 m/95 mm2, with eyelet Ø10 mm	pcs.		1,287.26	
5.4.17-6.01.03	Cable terminal box KG 30×2	pcs.		218.33	
5.4.17-6.01.04	Strip 10×2 for gel filled cables	pcs.		40.72	
5.4.17-6.01.08	Cabinet with foundation, complete with earthing strand for connection to the closer rail FeZn 95 mm^2, L = 5 m with eyelet Ø10 mm. Containing terminal blocks for AC power cable termination, terminal blocks for termination of a DC power cable for 4 ATB telephones, set of 5 pcs. of fiber optic splice boxes with adapters for fiber termination, 230VAC/ 48VDC converter and protection equipment. Corresponding fiber optic patch cables included.	set	6	2,954.00	17,724.00
5.4.17-6.01.09	Industrial Layer 2 switch, min. 6 100/1000Base-X SFP ports, 4x100Base-LX 10km SFP Modules, 2x1000Base-LX 20km SFP Modules uplinks, extended temperature range, ERPS (ITU-T G.8032) support, DC power supply.	pcs.	6	1,594.00	9,564.00
5.4.17-6.01.07	Thermoshrinking joint to connect the branch cable of the existing line side cable with the cable TK 59 M 10x4x0,8	pcs.		202.84	
5.4.17-6.01.10	Optical branch joint (for latancy splices) to connect the branch optic cable 6x9/125um to the OK3 optic cable	pcs.	6	112.00	672.00
5.4.17-6.01.11	Cable XP 41 2x2,5mm2	m	60		
5.4.17-6.01.12	Cable TK 59 M 1x4x0,8	m	1,800		
5.4.17-6.01.13	Fiber optic cable 6x9/125μm G.567.A1	m	2,130		
5.4.17-7	**Subsection Lovćenac-Mali Iđoš - Bačka Palanka**				
5.4.17-7.01	**Material**				
5.4.17-7.01.01	ATB telephone to be mounted on the signal pole, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication. Fiber optic patch cable included.	pcs.	20	7,505.62	150,112.40
5.4.17-7.01.02	Cabinet comprising the cable terminal box KG 30×2 and cable strips with foundation, complete with earthing strand for connection to the closer rail L=5 m/95 mm2, with eyelet Ø10 mm	pcs.		1,287.26	
5.4.17-7.01.03	Cable terminal box KG 30×2	pcs.		218.33	

BILL OF QUANTITIES FOR PART-5, APPENDIX-1
NOVI SAD - SUBOTICA
BILL OF QUANTITY
BOOK 5.4
DISPATCHER SYSTEM - MATERIAL

5.4.17-7.01.04	Strip 10×2 for gel filled cables	pcs.		40.72	
5.4.17-7.01.08	Cabinet with foundation, complete with earthing strand for connection to the closer rail FeZn 95 mm^2, L = 5 m with eyelet Ø10 mm. Containing terminal blocks for AC power cable termination, terminal blocks for termination of a DC power cable for 4 ATB telephones, set of 5 pcs. of fiber optic splice boxes with adapters for fiber termination, 230VAC/ 48VDC converter and protection equipment. Corresponding fiber optic patch cables included.	set	5	2,954.00	14,770.00
5.4.17-7.01.09	Industrial Layer 2 switch, min. 6 100/1000Base-X SFP ports, 4x100Base-LX 10km SFP Modules, 2x1000Base-LX 20km SFP Modules uplinks, extended temperature range, ERPS (ITU-T G.8032) support, DC power supply.	pcs.	5	1,594.00	7,970.00
5.4.17-7.01.07	Thermoshrinking joint to connect the branch cable of the existing line side cable with the cable TK 59 M 10x4x0,8	pcs.		202.84	
5.4.17-7.01.10	Optical branch joint (for latancy splices) to connect the branch optic cable 6x9/125um to the OK3 optic cable	pcs.	5	112.00	560.00
5.4.17-7.01.11	Cable XP 41 2x2,5mm2	m	50		
5.4.17-7.01.12	Cable TK 59 M 1x4x0,8	m	1,500		
5.4.17-7.01.13	Fiber optic cable 6x9/125μm G.567.A1	m	1,775		
5.4.17-8	**Subsection Bačka Palanka - Žednik**				
5.4.17-8.01	**Material**				
5.4.17-8.01.01	ATB telephone to be mounted on the signal pole, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication. Fiber optic patch cable included.	pcs.	20	7,505.62	150,112.40
5.4.17-8.01.02	Cabinet comprising the cable terminal box KG 30×2 and cable strips with foundation, complete with earthing strand for connection to the closer rail L=5 m/95 mm2, with eyelet Ø10 mm	pcs.	5	1,287.26	6,436.30
5.4.17-8.01.03	Cable terminal box KG 30×2	pcs.	5	218.33	1,091.65
5.4.17-8.01.04	Strip 10×2 for gel filled cables	pcs.	20	40.72	814.40
5.4.17-8.01.08	Cabinet with foundation, complete with earthing strand for connection to the closer rail FeZn 95 mm^2, L = 5 m with eyelet Ø10 mm. Containing terminal blocks for AC power cable termination, terminal blocks for termination of a DC power cable for 4 ATB telephones, set of 5 pcs. of fiber optic splice boxes with adapters for fiber termination, 230VAC/ 48VDC converter and protection equipment. Corresponding fiber optic patch cables included.	set	5	2,954.00	14,770.00
5.4.17-8.01.09	Industrial Layer 2 switch, min. 6 100/1000Base-X SFP ports, 4x100Base-LX 10km SFP Modules, 2x1000Base-LX 20km SFP Modules uplinks, extended temperature range, ERPS (ITU-T G.8032) support, DC power supply.	pcs.	5	1,594.00	7,970.00
5.4.17-8.01.07	Thermoshrinking joint to connect the branch cable of the existing line side cable with the cable TK 59 M 10x4x0,8	pcs.	5	202.84	1,014.20
5.4.17-8.01.10	Optical branch joint (for latancy splices) to connect the branch optic cable 6x9/125um to the OK3 optic cable	pcs.	5	112.00	560.00
5.4.17-8.01.11	Cable XP 41 2x2,5mm2	m	50		
5.4.17-8.01.12	Cable TK 59 M 1x4x0,8	m	1,500		
5.4.17-8.01.13	Fiber optic cable 6x9/125μm G.567.A1	m	1,775		

BILL OF QUANTITIES FOR PART-5, APPENDIX-1
NOVI SAD - SUBOTICA
BILL OF QUANTITY
BOOK 5.4
DISPATCHER SYSTEM - MATERIAL

5.4.17-9	**Subsection Žednik - Naumovićevo**				
5.4.17-9.01	**Material**				
5.4.17-9.01.01	ATB telephone to be mounted on the signal pole, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication. Fiber optic patch cable included.	pcs.	12	7,505.62	90,067.44
5.4.17-9.01.02	Cabinet comprising the cable terminal box KG 30×2 and cable strips with foundation, complete with earthing strand for connection to the closer rail L=5 m/95 mm2, with eyelet Ø10 mm	pcs.		1,287.26	
5.4.17-9.01.03	Cable terminal box KG 30×2	pcs.		218.33	
5.4.17-9.01.04	Strip 10×2 for gel filled cables	pcs.		40.72	
5.4.17-9.01.08	Cabinet with foundation, complete with earthing strand for connection to the closer rail FeZn 95 mm^2, L = 5 m with eyelet Ø10 mm. Containing terminal blocks for AC power cable termination, terminal blocks for termination of a DC power cable for 4 ATB telephones, set of 5 pcs. of fiber optic splice boxes with adapters for fiber termination, 230VAC/ 48VDC converter and protection equipment. Corresponding fiber optic patch cables included.	set	3	2,954.00	8,862.00
5.4.17-9.01.09	Industrial Layer 2 switch, min. 6 100/1000Base-X SFP ports, 4x100Base-LX 10km SFP Modules, 2x1000Base-LX 20km SFP Modules uplinks, extended temperature range, ERPS (ITU-T G.8032) support, DC power supply.	pcs.	3	1,594.00	4,782.00
5.4.17-9.01.07	Thermoshrinking joint to connect the branch cable of the existing line side cable with the cable TK 59 M 10x4x0,8	pcs.		202.84	
5.4.17-9.01.10	Optical branch joint (for latancy splices) to connect the branch optic cable 6x9/125um to the OK3 optic cable	pcs.	3	112.00	336.00
5.4.17-9.01.11	Cable XP 41 2x2,5mm2	m	30		
5.4.17-9.01.12	Cable TK 59 M 1x4x0,8	m	900		
5.4.17-9.01.13	Fiber optic cable 6x9/125μm G.567.A1	m	1,065		
5.4.17-10	**Subsection Naumovićevo - Subotica**				
5.4.17-10.01	**Material**				
5.4.17-10.01.01	ATB telephone to be mounted on the signal pole, containing terminal blocks for termination of a DC power cable and fiber optic 100Base-LX 10km port for VoIP communication. Fiber optic patch cable included.	pcs.	12	7,505.62	90,067.44
5.4.17-10.01.02	Cabinet comprising the cable terminal box KG 30×2 and cable strips with foundation, complete with earthing strand for connection to the closer rail L=5 m/95 mm2, with eyelet Ø10 mm	pcs.		1,287.26	
5.4.17-10.01.03	Cable terminal box KG 30×2	pcs.		218.33	
5.4.17-10.01.04	Strip 10×2 for gel filled cables	pcs.		40.72	
5.4.17-10.01.08	Cabinet with foundation, complete with earthing strand for connection to the closer rail FeZn 95 mm^2, L = 5 m with eyelet Ø10 mm. Containing terminal blocks for AC power cable termination, terminal blocks for termination of a DC power cable for 4 ATB telephones, set of 5 pcs. of fiber optic splice boxes with adapters for fiber termination, 230VAC/ 48VDC converter and protection equipment. Corresponding fiber optic patch cables included.	set	3	2,954.00	8,862.00

BILL OF QUANTITIES FOR PART-5, APPENDIX-1 NOVI SAD - SUBOTICA BILL OF QUANTITY BOOK 5.4 DISPATCHER SYSTEM - MATERIAL					
5.4.17-10.01.09	Industrial Layer 2 switch, min. 6 100/1000Base-X SFP ports, 4x100Base-LX 10km SFP Modules, 2x1000Base-LX 20km SFP Modules uplinks, extended temperature range, ERPS (ITU-T G.8032) support, DC power supply.	pcs.	3	1,594.00	4,782.00
5.4.17-10.01.07	Thermoshrinking joint to connect the branch cable of the existing line side cable with the cable TK 59 M 10x4x0,8	pcs.		202.84	
5.4.17-10.01.10	Optical branch joint (for latancy splices) to connect the branch optic cable 6x9/125um to the OK3 optic cable	pcs.	3	112.00	336.00
5.4.17-10.01.11	Cable XP 41 2x2,5mm2	m	30		
5.4.17-10.01.12	Cable TK 59 M 1x4x0,8	m	940		
5.4.17-10.01.13	Fiber optic cable 6x9/125µm G.567.A1	m	1,105		
5.4.02.19	**Interface towards the existing RAT exchange**				
5.4.02.19.01	Interface towards the existing RAT exchange - material + works	set	1	4,600.08	4,600.08
	TOTAL(USD):				**3,212,456.55**

Party A, Mr. XU YANG

Party B, Nikola Tomašević

BILL OF QUANTITIES FOR PART - 6 , APPENDIX-1
NOVI SAD - SUBOTICA
BILL OF QUANTITY
BOOK 5.4
DISPATCHER SYSTEM - WORKS

Item	Description	UoM.	Qty	Unit price USD	TOTAL USD
5.4.02	**DISPATCHER DEVICES NOVI SAD - SUBOTICA**				
5.4.02.01	**Central traffic dispatcher Novi Sad - Subotica**				
5.4.02.01.02	**Works**				
5.4.02.01.02.01	Installation, testing and putting into operation of the central dispatcher device	set	1	15,272.40	15,272.40
5.4.02.01.02.02	Dismantling od the existing relay equipment of central traffic dispatcher Novi Sad - Subotica	set	1	536.36	536.36
5.4.02.01.02.03	Installation design	set	1	1,755.36	1,755.36
5.4.02.01.02.04	As-Built Documentation with operation instructions	set	1	487.60	487.60
	Central traffic dispatcher Novi Sad - Subotica - works				-
5.4.02.02	**Central electric traction dispatcher Novi sad - Indjija and Novi Sad - Subotica**				-
5.4.02.02.02	**Works**				-
5.4.02.02.02.01	Installation, testing and putting into operation of the central dispatcher device	set	1	17,014.08	17,014.08
5.4.02.02.02.02	Dismantling od the existing relay equipment of central elecric traction dispatcher Novi Sad - Indjija and Novi Sad - Subotica	set	1	536.36	536.36
5.4.02.02.02.03	Installation design	set	1	1,755.36	1,755.36
5.4.02.02.02.04	As-Built Documentation with operation instructions	set	1	487.60	487.60
	Central electric traction dispatcher Novi sad - Indjija and Novi Sad - Subotica - works				-
					-
5.4.02.03	**Station dispatcher device Novi Sad**				-
5.4.02.03.02	**Works**				-
5.4.02.03.02.02	Installation of complete station equipment and accessories, together with cabling and wiring	set	1	33,331.66	33,331.66
5.4.02.03.02.03	Installation of a telephone set at the entry and exit signals, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cables	pcs.	22	310.11	6,822.42
5.4.02.03.02.04	Installation design	set	1	2,242.96	2,242.96
5.4.02.03.02.05	Measuring, testing and commissioning	set	1	5,578.14	5,578.14
5.4.02.03.02.06	As-Built Documentation with operation and maintenance instructions	set	1	536.36	536.36
5.4.02.03.02.07	Laying of cable JH(St)H, S/FTP, N2XH-J	m	1100	0.83	913.00
	Station dispatcher device Novi Sad - works				-
5.4.02.04	**Station dispatcher device Sajlovo**				-
5.4.02.04.02	**Works**				-
5.4.02.04.02.02	Installation of complete station equipment and accessories, together with cabling and wiring	set	1	16,626.46	16,626.46
5.4.02.04.02.03	Installation of a telephone set at the entry and exit signals, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cables	set	12	310.11	3,721.32
5.4.02.04.02.04	Installation design	set	1	2,145.44	2,145.44
5.4.02.04.02.05	Measuring, testing and commissioning	set	1	4,778.48	4,778.48
5.4.02.04.02.06	As-Built Documentation with operation and maintenance instructions	set	1	536.36	536.36
5.4.02.04.02.07	Laying of cable JH(St)H, S/FTP, N2XH-J	m	330	0.83	273.90
	Station dispatcher device Sajlovo - works				-
5.4.02.05	**Station dispatcher device Rumenka**				-
5.4.02.05.02	**Works**				-
5.4.02.05.02.02	Installation of complete station equipment and accessories, together with cabling and wiring	set	1	20,786.85	20,786.85
5.4.02.05.02.03	Installation of a telephone set at the entry and exit signals, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cables	set	11	310.11	3,411.21
5.4.02.05.02.04	Installation design	set	1	2,145.44	2,145.44

5.4.02.05.02.05	Measuring, testing and commissioning	set	1	4,290.88	4,290.88
5.4.02.05.02.06	As-Built Documentation with operation and maintenance instructions	set	1	536.36	536.36
5.4.02.05.02.07	Laying of cable JH(St)H, S/FTP, N2XH-J	m	395	0.83	327.85
	Station dispatcher device Rumenka - works				-
5.4.02.06	**Station dispatcher device Kisac**				-
5.4.02.06.02	**Works**				-
5.4.02.06.02.02	Installation of complete station equipment and accessories, together with cabling and wiring	set	1	18,160.30	18,160.30
5.4.02.06.02.03	Installation of a telephone set at the entry and exit signals, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cables	set	8	310.11	2,480.88
5.4.02.06.02.04	Installation design	set	1	2,145.44	2,145.44
5.4.02.06.02.05	Measuring, testing and commissioning	set	1	4,290.88	4,290.88
5.4.02.06.02.06	As-Built Documentation with operation and maintenance instructions	set	1	536.36	536.36
5.4.02.06.02.07	Laying of cable JH(St)H, S/FTP, N2XH-J	m	395	0.83	327.85
	Station dispatcher device Kisac - works				-
5.4.02.07	**Station dispatcher device Stepanovicevo**				-
5.4.02.07.02	**Works**				-
5.4.02.07.02.02	Installation of complete station equipment and accessories, together with cabling and wiring	set	1	18,168.10	18,168.10
5.4.02.07.02.03	Installation of a telephone set at the entry and exit signals, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cables	set	8	310.11	2,480.88
5.4.02.07.02.04	Installation design	set	1	2,145.44	2,145.44
5.4.02.07.02.05	Measuring, testing and commissioning	set	1	4,290.88	4,290.88
5.4.02.07.02.06	As-Built Documentation with operation and maintenance instructions	set	1	487.60	487.60
5.4.02.07.02.07	Laying of cable JH(St)H, S/FTP, N2XH-J	m	295	0.83	244.85
	Station dispatcher device Stepanovicevo - works				-
5.4.02.08	**Station dispatcher device Zmajevo**				-
5.4.02.08.02	**Works**				-
5.4.02.08.02.02	Installation of complete station equipment and accessories, together with cabling and wiring	set	1	17,543.98	17,543.98
5.4.02.08.02.03	Installation of a telephone set at the entry and exit signals, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cables	set	8	310.11	2,480.88
5.4.02.08.02.04	Installation design	set	1	2,145.44	2,145.44
5.4.02.08.02.05	Measuring, testing and commissioning	set	1	4,290.88	4,290.88
5.4.02.08.02.06	As-Built Documentation with operation and maintenance instructions	set	1	487.60	487.60
5.4.02.08.02.07	Laying of cable JH(St)H, S/FTP, N2XH-J	m	395	0.83	327.85
	Station dispatcher device Zmajevo - works				-
5.4.02.09	**Station dispatcher device Vrbas Novi**				-
5.4.02.09.02	**Works**				-
5.4.02.09.02.02	Installation of complete station equipment and accessories, together with cabling and wiring	set	1	22,593.66	22,593.66
5.4.02.09.02.03	Installation of a telephone set at the entry and exit signals, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cables	set	12	310.11	3,721.32
5.4.02.09.02.04	Installation design	set	1	2,438.00	2,438.00
5.4.02.09.02.05	Measuring, testing and commissioning	set	1	4,876.00	4,876.00
5.4.02.09.02.06	As-Built Documentation with operation and maintenance instructions	set	1	487.60	487.60
5.4.02.09.02.07	Laying of cable JH(St)H, S/FTP, N2XH-J	m	190	0.84	159.60
	Station dispatcher device Vrbas Novi - works				-
5.4.02.10	**Station dispatcher device Vrbas**				-
5.4.02.10.02	**Works**				-
5.4.02.10.02.02	Installation of complete station equipment and accessories, together with cabling and wiring	set	1	10,195.49	10,195.49
5.4.02.10.02.03	Installation of a telephone set at the entry and exit signals, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cables	set	5	310.11	1,550.55
5.4.02.10.02.04	Installation design	set	1	2,145.44	2,145.44
5.4.02.10.02.05	Measuring, testing and commissioning	set	1	3,900.80	3,900.80
5.4.02.10.02.06	As-Built Documentation with operation and maintenance instructions	set	1	487.60	487.60

5.4.02.10.02.07	Laying of cable JH(St)H, S/FTP, N2XH-J	m	395	0.83	327.85
	Station dispatcher device Vrbas - works				-
5.4.02.11	**Station dispatcher device Lovcenac**				-
5.4.02.11.02	**Works**				-
5.4.02.11.02.02	Installation of complete station equipment and accessories, together with cabling and wiring	set	1	22,014.75	22,014.75
5.4.02.11.02.03	Installation of a telephone set at the entry and exit signals, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cables	set	8	310.11	2,480.88
5.4.02.11.02.04	Installation design	set	1	2,145.44	2,145.44
5.4.02.11.02.05	Measuring, testing and commissioning	set	1	4,290.88	4,290.88
5.4.02.11.02.06	As-Built Documentation with operation and maintenance instructions	set	1	487.60	487.60
5.4.02.11.02.07	Laying of cable JH(St)H, S/FTP, N2XH-J	m	335	0.83	278.05
	Station dispatcher device Lovcenac - works				-
5.4.02.12	**Station dispatcher device Backa Topola**				-
5.4.02.12.02	**Works**				-
5.4.02.12.02.02	Installation of complete station equipment and accessories, together with cabling and wiring	set	1	17,543.98	17,543.98
5.4.02.12.02.03	Installation of a telephone set at the entry and exit signals, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cables	set	8	310.11	2,480.88
5.4.02.12.02.04	Installation design	set	1	2,145.44	2,145.44
5.4.02.12.02.05	Measuring, testing and commissioning	set	1	4,290.88	4,290.88
5.4.02.12.02.06	As-Built Documentation with operation and maintenance instructions	set	1	487.60	487.60
5.4.02.12.02.07	Laying of cable JH(St)H, S/FTP, N2XH-J	m	340	0.83	282.20
	Station dispatcher device Backa Topola - works				-
5.4.02.13	**Station dispatcher device Zednik**				-
5.4.02.13.02	**Works**				-
5.4.02.13.02.02	Installation of complete station equipment and accessories, together with cabling and wiring	set	1	17,544.86	17,544.86
5.4.02.13.02.03	Installation of a telephone set at the entry and exit signals, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cables	set	8	310.11	2,480.88
5.4.02.13.02.04	Installation design	set	1	2,145.44	2,145.44
5.4.02.13.02.05	Measuring, testing and commissioning	set	1	4,290.88	4,290.88
5.4.02.13.02.06	As-Built Documentation with operation and maintenance instructions	set	1	487.60	487.60
5.4.02.13.02.07	Laying of cable JH(St)H, S/FTP, N2XH-J	m	395	0.83	327.85
	Station dispatcher device Zednik - works				-
5.4.02.14	**Station dispatcher device Naumovicevo**				-
5.4.02.14.02	**Works**				-
5.4.02.14.02.02	Installation of complete station equipment and accessories, together with cabling and wiring	set	1	19,682.09	19,682.09
5.4.02.14.02.03	Installation of a telephone set at the entry and exit signals, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cables	set	11	310.11	3,411.21
5.4.02.14.02.04	Installation design	set	1	2,145.44	2,145.44
5.4.02.14.02.05	Measuring, testing and commissioning	set	1	4,290.88	4,290.88
5.4.02.14.02.06	As-Built Documentation with operation and maintenance instructions	set	1	487.60	487.60
5.4.02.14.02.07	Laying of cable JH(St)H, S/FTP, N2XH-J	m	620	0.83	514.60
	Station dispatcher device Naumovicevo - works				-
5.4.02.15	**Station dispatcher device Subotica**				-
5.4.02.15.02	**Works**				-
5.4.02.15.02.02	Installation of complete station equipment and accessories, together with cabling and wiring	set	1	29,256.00	29,256.00
5.4.02.15.02.03	Installation of the reduced version of the statiojn device	set	2	14,628.00	29,256.00
5.4.02.15.02.04	Installation of a telephone set at the entry and exit signals, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cables	set	30	310.11	9,303.30
5.4.02.15.02.05	Installation design	set	1	2,438.00	2,438.00
5.4.02.15.02.06	Measuring, testing and commissioning	set	1	4,876.00	4,876.00
5.4.02.15.02.07	As-Built Documentation with operation and maintenance instructions	set	1	536.36	536.36
5.4.02.15.02.08	Laying of cable JH(St)H, S/FTP, N2XH-J	m	790	0.83	655.70

	Station dispatcher device Subotica - works				-
5.4.02.16	**Border hut + border SPN**				-
5.4.02.16.02	**Works**				-
5.4-02.16.02.01	Installation of the compelete equipent and accessories, wiring and cabling	pcs.	1	8,971.84	8,971.84
5.4-02.16.02.02	Installation of the cable terminal box KG 10×2 with fuses	pcs.		50.71	-
5.4-02.16.02.03	Opening and closing of the cable trough	m	0	-	-
5.4-02.16.02.04	Laying , introduction and splicing of the cables TK 39 P and PP 41	m	0	-	-
5.4-02.16.02.05	Installation design	set	1	1,755.36	1,755.36
5.4-02.16.02.06	Measuring, testing and commissioning	set	1	3,510.72	3,510.72
5.4-02.16.02.07	As-Built Documentation	set	1	487.60	487.60
	Border hut + border SPN - works				-
					-
5.4.02.17	**ATB telephones Novi Sad ß Subotica**				-
5.4.17-1	**Subsection Novi Sad - Rumenka**				-
5.4.17-1.02	**Works**				-
5.4.17-1.02.01	Installation of the ATB telephones on the signal pole, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cable	pcs.	8	750.62	6,004.96
5.4.17-1.02.02	Installation of cabinet with foundation and connection of earthing strand. Introduction and termination of AC power, DC power and fiber optic cables. Installation and connection of industrial Layer 2 switch	pcs.	2	2,337.87	4,675.74
5.4.17-1.02.03	Dismantling and storing of existing telephones	pcs.	4	195.04	780.16
5.4.17-1.02.04	Installation of the thermoshrinking joint between the branch cable of the line side cable and the cable TK 59 M 15×4×0,8	pcs.		216.38	-
5.4.17-1.02.10	Installation of the optical branch joint (for latancy splices) to connect the branch optic cable 6x9/125um to the OK3 optic cable	pcs.	2	381.52	763.04
5.4.17-1.02.05	Opening and closing of the cable trough	m	0	-	-
5.4.17-1.02.06	Laying XP41, TK59M, fiber optic cable	m	0	-	-
5.4.17-1.02.07	Installation design	set	2	155.10	310.20
5.4.17-1.02.08	Measuring, testing and commissioning	set	2	1,952.35	3,904.70
5.4.17-1.02.09	As-Built Documentation	set	2	72.22	144.44
	ATB telephones Novi Sad - Rumenka - works				-
5.4.17-2	**Subsection Rumenka - Kisač**				-
5.4.17-2.02	**Works**				-
5.4.17-1.02.01	Installation of the ATB telephones on the signal pole, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cable	pcs.	8	750.62	6,004.96
5.4.17-1.02.02	Installation of cabinet with foundation and connection of earthing strand. Introduction and termination of AC power, DC power and fiber optic cables. Installation and connection of industrial Layer 2 switch	pcs.	2	2,337.87	4,675.74
5.4.17-1.02.03	Dismantling and storing of existing telephones	pcs.	4	195.04	780.16
5.4.17-1.02.04	Installation of the thermoshrinking joint between the branch cable of the line side cable and the cable TK 59 M 15×4×0,8	pcs.		216.38	-
5.4.17-1.02.10	Installation of the optical branch joint (for latancy splices) to connect the branch optic cable 6x9/125um to the OK3 optic cable	pcs.	2	381.52	763.04
5.4.17-1.02.05	Opening and closing of the cable trough	m	0	-	-
5.4.17-1.02.06	Laying XP41, TK59M, fiber optic cable	m	0	-	-
5.4.17-1.02.07	Installation design	set	2	155.10	310.20
5.4.17-1.02.08	Measuring, testing and commissioning	set	2	1,952.35	3,904.70
5.4.17-1.02.09	As-Built Documentation	set	2	72.22	144.44
	ATB telephones Rumenka - Kisač - works				-
5.4.17-3	**Subsection Kisač - Stepanovićevo**				-
5.4.17-3.02	**Works**				-
5.4.17-3.02.01	Installation of the ATB telephones on the signal pole, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cable	pcs.	8	750.62	6,004.96

5.4.17-3.02.02	Installation of cabinet with foundation and connection of earthing strand. Introduction and termination of AC power, DC power and fiber optic cables. Installation and connection of industrial Layer 2 switch	pcs.	2	2,337.87	4,675.74
5.4.17-3.02.03	Dismantling and storing of existing telephones	pcs.	6	195.04	1,170.24
5.4.17-3.02.04	Installation of the thermoshrinking joint between the branch cable of the line side cable and the cable TK 59 M 15×4×0,8	pcs.		216.38	-
5.4.17-3.02.10	Installation of the optical branch joint (for latancy splices) to connect the branch optic cable 6x9/125um to the OK3 optic cable	pcs.	2	381.52	763.04
5.4.17-3.02.05	Opening and closing of the cable trough	m	0	-	-
5.4.17-3.02.06	Laying XP41, TK59M, fiber optic cable	m	0	-	-
5.4.17-3.02.07	Installation design	set	2	155.10	310.20
5.4.17-3.02.08	Measuring, testing and commissioning	set	2	1,952.35	3,904.70
5.4.17-3.02.09	As-Built Documentation	set	2	72.22	144.44
	ATB telephones Kisač - Stepanovićevo - works				-
5.4.17-4	**Subsection Stepanovićevo - Zmajevo**				-
5.4.17-4.02	**Works**				-
5.4.17-4.02.01	Installation of the ATB telephones on the signal pole, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cable	pcs.	4	750.62	3,002.48
5.4.17-4.02.02	Installation of cabinet with foundation and connection of earthing strand. Introduction and termination of AC power, DC power and fiber optic cables. Installation and connection of industrial Layer 2 switch	pcs.	1	2,369.56	2,369.56
5.4.17-4.02.03	Dismantling and storing of existing telephones	pcs.	2	195.04	390.08
5.4.17-4.02.04	Installation of the thermoshrinking joint between the branch cable of the line side cable and the cable TK 59 M 15×4×0,8	pcs.		216.38	-
5.4.17-4.02.10	Installation of the optical branch joint (for latancy splices) to connect the branch optic cable 6x9/125um to the OK3 optic cable	pcs.	6	381.52	2,289.12
5.4.17-4.02.05	Opening and closing of the cable trough	m	0	-	-
5.4.17-4.02.06	Laying XP41, TK59M, fiber optic cable	m	0	-	-
5.4.17-4.02.07	Installation design	set	1	155.10	155.10
5.4.17-4.02.08	Measuring, testing and commissioning	set	1	1,952.35	1,952.35
5.4.17-4.02.09	As-Built Documentation	set	1	72.22	72.22
	ATB telephones Stepanovićevo - Zmajevo - works				-
5.4.17-5	**Subsection Zmajevo - Vrbas Nova**				-
5.4.17-5.02	**Works**				-
5.4.17-5.02.01	Installation of the ATB telephones on the signal pole, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cable	pcs.	16	750.62	12,009.92
5.4.17-5.02.02	Installation of cabinet with foundation and connection of earthing strand. Introduction and termination of AC power, DC power and fiber optic cables. Installation and connection of industrial Layer 2 switch	pcs.	4	2,337.87	9,351.48
5.4.17-5.02.03	Dismantling and storing of existing telephones	pcs.	10	195.04	1,950.40
5.4.17-5.02.04	Installation of the thermoshrinking joint between the branch cable of the line side cable and the cable TK 59 M 15×4×0,8	pcs.		216.38	-
5.4.17-5.02.10	Installation of the optical branch joint (for latancy splices) to connect the branch optic cable 6x9/125um to the OK3 optic cable	pcs.	4	381.52	1,526.08
5.4.17-5.02.05	Opening and closing of the cable trough	m	0	-	-
5.4.17-5.02.06	Laying XP41, TK59M, fiber optic cable	m	0	-	-
5.4.17-5.02.07	Installation design	set	4	155.10	620.40
5.4.17-5.02.08	Measuring, testing and commissioning	set	4	1,952.35	7,809.40
5.4.17-5.02.09	As-Built Documentation	set	4	72.22	288.88
	ATB telephones Zmajevo - Vrbas Nova - works				-
5.4.17-6	**Subsection Vrbas Nova - Lovćenac-Mali Iđoš**				-
5.4.17-6.02	**Works**				-
5.4.17-6.02.01	Installation of the ATB telephones on the signal pole, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cable	pcs.	24	750.62	18,014.88

5.4.17-6.02.02	Installation of cabinet with foundation and connection of earthing strand. Introduction and termination of AC power, DC power and fiber optic cables. Installation and connection of industrial Layer 2 switch	pcs.	6	2,337.87	14,027.22
5.4.17-6.02.03	Dismantling and storing of existing telephones	pcs.	14	195.04	2,730.56
5.4.17-6.02.04	Installation of the thermoshrinking joint between the branch cable of the line side cable and the cable TK 59 M 15×4×0,8	pcs.		216.38	-
5.4.17-6.02.10	Installation of the optical branch joint (for latancy splices) to connect the branch optic cable 6x9/125um to the OK3 optic cable	pcs.	6	381.52	2,289.12
5.4.17-6.02.05	Opening and closing of the cable trough	m	0	-	-
5.4.17-6.02.06	Laying XP41, TK59M, fiber optic cable	m	0	-	-
5.4.17-6.02.07	Installation design	set	6	155.10	930.60
5.4.17-6.02.08	Measuring, testing and commissioning	set	6	1,952.35	11,714.10
5.4.17-6.02.09	As-Built Documentation	set	6	72.22	433.32
	ATB telephones Vrbas Nova - Lovćenac-Mali Iđoš - works				-
5.4.17-7	**Subsection Lovćenac-Mali Iđoš - Bačka Palanka**				-
5.4.17-7.02	**Works**				-
5.4.17-7.02.01	Installation of the ATB telephones on the signal pole, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cable	pcs.	20	750.62	15,012.40
5.4.17-7.02.02	Installation of cabinet with foundation and connection of earthing strand. Introduction and termination of AC power, DC power and fiber optic cables. Installation and connection of industrial Layer 2 switch	pcs.	5	2,337.87	11,689.35
5.4.17-7.02.03	Dismantling and storing of existing telephones	pcs.	12	195.04	2,340.48
5.4.17-7.02.04	Installation of the thermoshrinking joint between the branch cable of the line side cable and the cable TK 59 M 15×4×0,8	pcs.		216.38	-
5.4.17-7.02.10	Installation of the optical branch joint (for latancy splices) to connect the branch optic cable 6x9/125um to the OK3 optic cable	pcs.	14	381.52	5,341.28
5.4.17-7.02.05	Opening and closing of the cable trough	m	0	-	-
5.4.17-7.02.06	Laying XP41, TK59M, fiber optic cable	m	0	-	-
5.4.17-7.02.07	Installation design	set	5	155.10	775.50
5.4.17-7.02.08	Measuring, testing and commissioning	set	5	1,952.35	9,761.75
5.4.17-7.02.09	As-Built Documentation	set	5	72.22	361.10
	ATB telephones Lovćenac-Mali Iđoš - Bačka Palanka - works				-
5.4.17-8	**Subsection Bačka Palanka - Žednik**				-
5.4.17-8.02	**Works**				-
5.4.17-8.02.01	Installation of the ATB telephones on the signal pole, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cable	pcs.	20	750.62	15,012.40
5.4.17-8.02.02	Installation of cabinet with foundation and connection of earthing strand. Introduction and termination of AC power, DC power and fiber optic cables. Installation and connection of industrial Layer 2 switch	pcs.	5	2,337.87	11,689.35
5.4.17-8.02.03	Dismantling and storing of existing telephones	pcs.	12	195.04	2,340.48
5.4.17-8.02.04	Installation of the thermoshrinking joint between the branch cable of the line side cable and the cable TK 59 M 15×4×0,8	pcs.		216.38	-
5.4.17-8.02.10	Installation of the optical branch joint (for latancy splices) to connect the branch optic cable 6x9/125um to the OK3 optic cable	pcs.	12	381.52	4,578.24
5.4.17-8.02.05	Opening and closing of the cable trough	m	0	-	-
5.4.17-8.02.06	Laying XP41, TK59M, fiber optic cable	m	0	-	-
5.4.17-8.02.07	Installation design	set	5	155.10	775.50
5.4.17-8.02.08	Measuring, testing and commissioning	set	5	1,952.35	9,761.75
5.4.17-8.02.09	As-Built Documentation	set	5	72.22	361.10
	ATB telephones Bačka Palanka - Žednik - works				-
5.4.17-9	**Subsection Žednik - Naumovićevo**				-
5.4.17-9.02	**Works**				-

5.4.17-9.02.01	Installation of the ATB telephones on the signal pole, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cable	pcs.	12	750.62	9,007.44
5.4.17-9.02.02	Installation of cabinet with foundation and connection of earthing strand. Introduction and termination of AC power, DC power and fiber optic cables. Installation and connection of industrial Layer 2 switch	pcs.	3	2,337.87	7,013.61
5.4.17-9.02.03	Dismantling and storing of existing telephones	pcs.	8	195.04	1,560.32
5.4.17-9.02.04	Installation of the thermoshrinking joint between the branch cable of the line side cable and the cable TK 59 M 15×4×0,8	pcs.		216.38	-
5.4.17-9.02.10	Installation of the optical branch joint (for latancy splices) to connect the branch optic cable 6x9/125um to the OK3 optic cable	pcs.	3	381.52	1,144.56
5.4.17-9.02.05	Opening and closing of the cable trough	m	0	-	-
5.4.17-9.02.06	Laying XP41, TK59M, fiber optic cable	m	0	-	-
5.4.17-9.02.07	Installation design	set	3	155.10	465.30
5.4.17-9.02.08	Measuring, testing and commissioning	set	3	1,952.35	5,857.05
5.4.17-9.02.09	As-Built Documentation	set	3	72.22	216.66
	ATB telephones Žednik - Naumovićevo - works				-
5.4.17-10	**Subsection Naumovićevo - Subotica**				-
5.4.17-10.02	**Works**				-
5.4.17-10.02.01	Installation of the ATB telephones on the signal pole, with introduction and placing the wires of TK 59 M cable and termination of fiber optic cable	pcs.	12	750.62	9,007.44
5.4.17-10.02.02	Installation of cabinet with foundation and connection of earthing strand. Introduction and termination of AC power, DC power and fiber optic cables. Installation and connection of industrial Layer 2 switch	pcs.	3	2,337.87	7,013.61
5.4.17-10.02.03	Dismantling and storing of existing telephones	pcs.	8	195.04	1,560.32
5.4.17-10.02.04	Installation of the thermoshrinking joint between the branch cable of the line side cable and the cable TK 59 M 15×4×0,8	pcs.		216.38	-
5.4.17-10.02.10	Installation of the optical branch joint (for latancy splices) to connect the branch optic cable 6x9/125um to the OK3 optic cable	pcs.	3	381.52	1,144.56
5.4.17-10.02.05	Opening and closing of the cable trough	m	0	-	-
5.4.17-10.02.06	Laying XP41, TK59M, fiber optic cable	m	0	-	-
5.4.17-10.02.07	Installation design	set	3	155.10	465.30
5.4.17-10.02.08	Measuring, testing and commissioning	set	3	1,952.35	5,857.05
5.4.17-10.02.09	As-Built Documentation	set	3	72.22	216.66
	ATB telephones Naumovićevo - Subotica - works				
	Total 5.4.7. ATB telephones Novi Sad - Subotica $				
				TOTAL(USD):	**774,952.63**

Party A, Mr. XU YANG

Party B, Nikola Tomašević

BILL OF QUANTITIES FOR PART-7, APPENDIX-1
NOVI SAD - SUBOTICA
BILL OF QUANTITY
BOOK 5.4
DISPATCHER SYSTEM - Local cable networks

Item	Description	UoM.	Qty	Unit price USD	TOTAL USD
5.4.01	**LOCAL CABLE NETWORKS**				
5.4.01.01	**Local cable network Novi Sad**				
5.4.01.01.01	**Material**				
5.4.01.01.01.08	Thermoshrinking joint	pcs.	10		CRSC
5.4.01.01.01.09	Thermoshrinking joint - branching	pcs.	2		CRSC
5.4.01.01.01.10	Indoor 19" standalone cabinet 42U/600x800mm for power supply equipment installation and termination and protection of DC power distribution. Max. load 600kg or higher. Containing terminal blocks for AC and DC power cable termination	pcs.	1	1,265.00	1,265.00
5.4.01.01.01.11	Cable distribution cabinet for outdoor installation, with a base and insulated wire strand for connection to the return conductor of traction current FeZn 95 mm², L = 12 m. Containing terminal blocks for TK59M cable termination and fiber optic splice closure for splicing	pcs.	3	930.60	2,791.80
5.4.01.01.01.12	Cable terminal box for indoor installation KG 10×2, with fuses	pcs.	0	107.68	0.00
5.4.01.01.01.13	Terminal strips for 10x2 for filled cables	pcs.	0	41.75	0.00
	Total: Local cable network Novi Sad - material				**4,056.80**
5.4.01.01.02	**Works**				0.00
5.4.01.01.02.01	Laying of cable TK 59	m	6,550		CRSC
5.4.01.01.02.02	Instalation of thermoshrinking joint	pcs.	10		CRSC
5.4.01.01.02.03	Installation of thermoshrinking joint - branching	pcs.	2		CRSC
5.4.01.01.02.04	Installation of indoor 19" standalone cabinet for power supply equipment; termination of AC and DC power cables	pcs.	1	112.00	112.00
5.4.01.01.02.05	Placement and installation of cable distribution cabinet and connection to the closer rail using insulated wire rope FeZn 95 mm²; termination of TK59M cables and splicing of fibers according to the design schemes	pcs.	3	224.00	672.00
5.4.01.01.02.06	Installation of cable terminal box for indoor installation KG 10×2, with fuses	pcs.	0	39.62	0.00
5.4.01.01.02.07	Installation of terminal strip 10x2 with placing the cables on it	pcs.	0	5.10	0.00
5.4.01.01.02.08	Planning of laying local cables	set	1		CRSC
5.4.01.01.02.09	Measuring and testing of the local cable network Novi Sad	set	1		CRSC
5.4.01.01.02.10	As-Built Documentation of the local cable network Novi Sad	set	1		CRSC
	Total: Local cable network Novi Sad works				**784.00**
	Total: Local cable network Novi Sad - material and works				
	Total: Local cable network Novi Sad - material and works - $				**4,840.80**
5.4.01.02	**Local cable network Sajlovo**				
5.4.01.02.01	**Materal**				
5.4.01.02.01.09	Thermoshrinking joint	pcs.	1		CRSC
5.4.01.02.01.10	Thermoshrinking joint - branching	pcs.	2		CRSC
5.4.01.02.01.15	Fiber optic cable 6x9/125µm G.567.A1	m	1,025	0.00	0.00
5.4.01.02.01.16	Fiber optic cable 12x9/125µm G.567.A1	m	1,900	0.00	0.00
5.4.01.02.01.17	Fiber optic cable 24x9/125µm G.567.A1	m	0	0.00	0.00

5.4.01.02.01.11	Indoor 19" standalone cabinet 42U/600x800mm for power supply equipment installation and termination and protection of DC power distribution. Max. load 600kg or higher. Containing terminal blocks for AC and DC power cable termination	pcs.	1	1,265.00	1,265.00
5.4.01.02.01.12	Cable distribution cabinet for outdoor installation, with a base and insulated wire strand for connection to the return conductor of traction current FeZn 95 mm², L = 12 m. Containing terminal blocks for TK59M cable termination and fiber optic splice closure for splicing	pcs.	3	930.60	2,791.80
5.4.01.02.01.13	Cable terminal box for indoor installation KG 10×2, with fuses	pcs.			0.00
5.4.01.02.01.14	Terminal strips for 10x2 for filled cables	pcs.	0	41.75	0.00
	Total: Local cable network Sajlovo- material				**4,056.80**
5.4.01.02.02	**Works**				
5.4.01.02.02.01	Laying of cable TK 59	m	3,260		CRSC
5.4.01.02.02.02	Instalation of thermoshrinking joint	pcs.	1		CRSC
5.4.01.02.02.03	Installation of thermoshrinking joint - branching	pcs.	2		CRSC
5.4.01.02.02.04	Installation of indoor 19" standalone cabinet for power supply equipment; termination of AC and DC power cables	pcs.	1	112.00	112.00
5.4.01.02.02.05	Placement and installation of cable distribution cabinet and connection to the closer rail using insulated wire rope FeZn 95 mm²; termination of TK59M cables and splicing of fibers according to the design schemes	pcs.	3	224.00	672.00
5.4.01.02.02.06	Installation of cable terminal box for indoor installation KG 10×2, with fuses	pcs.	0	0.00	0.00
5.4.01.02.02.07	Installation of terminal strip 10x2 with placing the cables on it	pcs.	0	5.10	0.00
5.4.01.02.02.08	Planning of laying local cables	set	1		CRSC
5.4.01.02.02.09	Measuring and testing of the local cable network Sajlovo	set	1		CRSC
5.4.01.02.02.10	As-Built Documentation of the local cable network Sajlovo	set	1		CRSC
	Total: Local cable network Sajlovo - works				**784.00**
	Total: Local cable network Sajlovo - material and works				
	Total: Local cable network Sajlovo - material and works - $				**4,840.80**
5.4.01.03	**Local cable network Rumenka**				
5.4.01.03.01	**Materal**				
5.4.01.03.01.07	Thermoshrinking joint	pcs.	3		CRSC
5.4.01.03.01.08	Thermoshrinking joint - branching	pcs.	1		CRSC
5.4.01.03.01.13	Fiber optic cable 6x9/125µm G.567.A1	m	1,610	0.00	0.00
5.4.01.03.01.14	Fiber optic cable 12x9/125µm G.567.A1	m	780	0.00	0.00
5.4.01.03.01.15	Fiber optic cable 24x9/125µm G.567.A1	m	470	0.00	0.00
5.4.01.03.01.09	Indoor 19" standalone cabinet 42U/600x800mm for power supply equipment installation and termination and protection of DC power distribution. Max. load 600kg or higher. Containing terminal blocks for AC and DC power cable termination	pcs.	1	1,265.00	1,265.00
5.4.01.03.01.10	Cable distribution cabinet for outdoor installation, with a base and insulated wire strand for connection to the return conductor of traction current FeZn 95 mm², L = 12 m. Containing terminal blocks for TK59M cable termination and fiber optic splice closure for splicing	pcs.	2	930.60	1,861.20
5.4.01.03.01.11	Cable terminal box for indoor installation KG 10×2, with fuses	pcs.	0	107.68	0.00
5.4.01.03.01.12	Terminal strips for 10x2 for filled cables	pcs.	0	41.75	0.00
	Total: Local cable network Rumenka- material				**3,126.20**
5.4.01.02.02	**Works**				

5.4.01.02.02.01	Laying of cable TK 59	m	2,860		CRSC
5.4.01.02.02.02	Instalation of thermoshrinking joint	pcs.	3		CRSC
5.4.01.02.02.03	Installation of thermoshrinking joint - branching	pcs.	1		CRSC
5.4.01.02.02.04	Installation of indoor 19" standalone cabinet for power supply equipment; termination of AC and DC power cables	pcs.	1	112.00	112.00
5.4.01.02.02.05	Placement and installation of cable distribution cabinet and connection to the closer rail using insulated wire rope FeZn 95 mm²; termination of TK59M cables and splicing of fibers according to the design schemes	pcs.	2	224.00	448.00
5.4.01.02.02.06	Installation of cable terminal box for indoor installation KG 10×2, with fuses	pcs.	0	39.62	0.00
5.4.01.02.02.07	Planning of laying local cables	set	0	1,430.00	0.00
5.4.01.02.02.08	Installation of terminal strip 10x2 with placing the cables on it	pcs.	0	5.10	0.00
5.4.01.02.02.09	Measuring and testing of the local cable network Rumenka	set	1		CRSC
5.4.01.02.02.10	As-Built Documentation of the local cable network Rumenka	set	1		CRSC
	Total: Local cable network Rumenka - works				**560.00**
	Total: Local cable network Rumenka - material and works				
	Total: Local cable network Rumenka - material and works - $				**3,686.20**
5.4.01.04	**Local cable network Kisac**				
5.4.01.04.01	**Material**				
5.4.01.04.01.07	Thermoshrinking joint	pcs.	7		CRSC
5.4.01.04.01.08	Thermoshrinking joint - branching	pcs.	0		CRSC
5.4.01.04.01.13	Fiber optic cable 6x9/125µm G.567.A1	m	1,715	0.00	0.00
5.4.01.04.01.14	Fiber optic cable 12x9/125µm G.567.A1	m	900	0.00	0.00
5.4.01.04.01.15	Fiber optic cable 24x9/125µm G.567.A1	m	0	0.00	0.00
5.4.01.04.01.09	Indoor 19" standalone cabinet 42U/600x800mm for power supply equipment installation and termination and protection of DC power distribution. Max. load 600kg or higher. Containing terminal blocks for AC and DC power cable termination	pcs.	1	1,265.00	1,265.00
5.4.01.04.01.10	Cable distribution cabinet for outdoor installation, with a base and insulated wire strand for connection to the return conductor of traction current FeZn 95 mm², L = 12 m. Containing terminal blocks for TK59M cable termination and fiber optic splice closure for splicing	pcs.	2	930.60	1,861.20
5.4.01.04.01.11	Cable terminal box for indoor installation KG 10×2, with fuses	pcs.	0	107.68	0.00
5.4.01.04.01.12	Terminal strips for 10x2 for filled cables	pcs.	0	41.75	0.00
5.4.01.04.01.16	Indoor wallmount cabinet with AC terminal blocks and RJ-45 modules; corresponding fiber optic and S/FTP patch cables included	set	1	321.00	321.00
5.4.01.04.01.17	Equipment for installation in indoor wallmount cabinet: Layer 2 switch (1x1000Base-LX 20km SFP module, min. 4x1000Base-T PoE ports, ERPS ITU-T G.8032 support, 230VAC power supply)	set	1	761.00	761.00
5.4.01.04.01.18	Uninterruptible power supply system min. 2000VA 230VAC with internal battery set 48VDC min. 7Ah	set	1	904.00	904.00
	Total: Local cable network Kisac - material				**5,112.20**
5.4.01.04.02	**Works**				
5.4.01.04.02.01	Laying of cable TK 59	m	2,845		CRSC
5.4.01.04.02.02	Instalation of thermoshrinking joint	pcs.	7		CRSC
5.4.01.04.02.03	Installation of thermoshrinking joint - branching	pcs.	0		CRSC
5.4.01.04.02.04	Installation of indoor 19" standalone cabinet for power supply equipment; termination of AC and DC power cables	pcs.	1	112.00	112.00

5.4.01.04.02.05	Placement and installation of cable distribution cabinet and connection to the closer rail using insulated wire rope FeZn 95 mm²; termination of TK59M cables and splicing of fibers according to the design schemes	pcs.	2	224.00	448.00
5.4.01.04.02.06	Installation of cable terminal box for indoor installation KG 10×2, with fuses	pcs.	2	67.20	134.40
5.4.01.04.02.12	Installation of wallmount cabinet; termination of TK59M and S/FTP cables according to the design schemes	set	1	85.00	85.00
5.4.01.04.02.13	Installation and connection of equipment in indoor wallmount cabinet	set	1	45.00	45.00
5.4.01.04.02.07	Planning of laying local cables	set	1		CRSC
5.4.01.04.02.08	Installation of terminal strip 10x2 with placing the cables on it	pcs.	0	5.10	0.00
5.4.01.04.02.09	Measuring and testing of the local cable network Kisac	set	1		CRSC
5.4.01.04.02.10	As-Built Documentation of the local cable network Kisac	set	1		
	Total: Local cable network Kisac - works				**824.40**
	Total: Local cable network Kisac - material and works				
	Total: Local cable network Kisac - material and works - $				**5,936.60**
5.4.01.05	**Local cable network Stepanovicevo**				
5.4.01.05.01	**Material**				
5.4.01.05.01.07	Thermoshrinking joint	pcs.	5		CRSC
5.4.01.05.01.08	Thermoshrinking joint - branching	pcs.	0		CRSC
5.4.01.05.01.13	Fiber optic cable 6x9/125µm G.567.A1	m	2,625	0.00	0.00
5.4.01.05.01.14	Fiber optic cable 12x9/125µm G.567.A1	m	420	0.00	0.00
5.4.01.05.01.15	Fiber optic cable 24x9/125µm G.567.A1	m		0.00	0.00
5.4.01.05.01.09	Indoor 19" standalone cabinet 42U/600x800mm for power supply equipment installation and termination and protection of DC power distribution. Max. load 600kg or higher. Containing terminal blocks for AC and DC power cable termination	pcs.	1	1,265.00	1,265.00
5.4.01.05.01.10	Cable distribution cabinet for outdoor installation, with a base and insulated wire strand for connection to the return conductor of traction current FeZn 95 mm², L = 12 m. Containing terminal blocks for TK59M cable termination and fiber optic splice closure for splicing	pcs.	1	930.60	930.60
5.4.01.05.01.11	Cable terminal box for indoor installation KG 10×2, with fuses	pcs.	0	107.68	0.00
5.4.01.05.01.12	Terminal strips for 10x2 for filled cables	pcs.	0	41.75	0.00
	Total: Local cable network Stepanovicevo - material				**2,195.60**
5.4.01.05.02	**Works**				
5.4.01.05.02.01	Laying of cable TK 59	m	3,045		CRSC
5.4.01.05.02.02	Instalation of thermoshrinking joint	pcs.	5		CRSC
5.4.01.05.02.03	Installation of thermoshrinking joint - branching	pcs.	0		CRSC
5.4.01.05.02.04	Installation of indoor 19" standalone cabinet for power supply equipment; termination of AC and DC power cables	pcs.	1	112.00	112.00
5.4.01.05.02.05	Placement and installation of cable distribution cabinet and connection to the closer rail using insulated wire rope FeZn 95 mm²; termination of TK59M cables and splicing of fibers according to the design schemes	pcs.	1	224.00	224.00
5.4.01.05.02.06	Installation of cable terminal box for indoor installation KG 10×2, with fuses	pcs.	0	0.00	0.00
5.4.01.05.02.07	Installation of terminal strip 10x2 with placing the cables on it	pcs.	0	5.10	0.00

5.4.01.05.02.08	Planning of laying local cables	set	1		CRSC
5.4.01.05.02.09	Measuring and testing of the local cable network Stepanicevo	set	1		CRSC
5.4.01.05.02.10	As-Built Documentation of the local cable network Stepanicevo	set	1		CRSC
	Total: Local cable network Stepanovicevo - works				**336.00**
	Total: Local cable network Stepanovicevo - material and works				
	Total: Local cable network Stepanovicevo - material and works - $				**2,531.60**
5.4.01.06	**Local cable network Zmajevo**				
5.4.01.06.01	**Material**				
5.4.01.06.01.07	Thermoshrinking joint	pcs.	5		CRSC
5.4.01.06.01.08	Thermoshrinking joint - branching	pcs.	0		CRSC
5.4.01.06.01.13	Fiber optic cable 6x9/125µm G.567.A1	m	2,215	0.00	0.00
5.4.01.06.01.14	Fiber optic cable 12x9/125µm G.567.A1	m	600	0.00	0.00
5.4.01.06.01.15	Fiber optic cable 24x9/125µm G.567.A1	m		0.00	0.00
5.4.01.06.01.09	Indoor 19" standalone cabinet 42U/600x800mm for power supply equipment installation and termination and protection of DC power distribution. Max. load 600kg or higher. Containing terminal blocks for AC and DC power cable termination	pcs.	1	1,265.00	1,265.00
5.4.01.06.01.10	Cable distribution cabinet for outdoor installation, with a base and insulated wire strand for connection to the return conductor of traction current FeZn 95 mm², L = 12 m. Containing terminal blocks for TK59M cable termination and fiber optic splice closure for splicing	pcs.	1	930.60	930.60
5.4.01.06.01.11	Cable terminal box for indoor installation KG 10×2, with fuses	pcs.	0	107.68	0.00
5.4.01.06.01.12	Terminal strips for 10x2 for filled cables	pcs.	0	41.75	0.00
5.4.01.06.01.16	Indoor wallmount cabinet with AC terminal blocks and RJ-45 modules; corresponding fiber optic and S/FTP patch cables included	set	1	321.00	321.00
5.4.01.06.01.17	Equipment for installation in indoor wallmount cabinet: Layer 2 switch (1x1000Base-LX 20km SFP module, min. 4x1000Base-T PoE ports, ERPS ITU-T G.8032 support, 230VAC power supply)	set	1	761.00	761.00
5.4.01.06.01.18	Uninterruptible power supply system min. 2000VA 230VAC with internal battery set 48VDC min. 7Ah	set	1	904.00	904.00
	Total: Local cable network Zmajevo - material				**4,181.60**
5.4.01.06.02	**Works**				
5.4.01.06.02.01	Laying of cable TK 59	m	3,075		CRSC
5.4.01.06.02.02	Instalation of thermoshrinking joint	pcs.	5		CRSC
5.4.01.06.02.03	Installation of thermoshrinking joint - branching	pcs.	0		CRSC
5.4.01.06.02.04	Installation of indoor 19" standalone cabinet for power supply equipment; termination of AC and DC power cables	pcs.	1	112.00	112.00
5.4.01.06.02.05	Placement and installation of cable distribution cabinet and connection to the closer rail using insulated wire rope FeZn 95 mm²; termination of TK59M cables and splicing of fibers according to the design schemes	pcs.	1	224.00	224.00
5.4.01.06.02.06	Installation of cable terminal box for indoor installation KG 10×2, with fuses	pcs.	0	67.20	0.00
5.4.01.06.02.12	Installation of wallmount cabinet; termination of TK59M and S/FTP cables according to the design schemes	set	1	85.00	85.00
5.4.01.06.02.13	Installation and connection of equipment in indoor wallmount cabinet	set	1	45.00	45.00
5.4.01.06.02.07	Planning of laying local cables	set	1		

5.4.01.06.02.08	Installation of terminal strip 10x2 with placing the cables on it	pcs.	0	5.10	0.00
5.4.01.06.02.09	Measuring and testing of the local cable network Zmajevo	set	1		CRSC
5.4.01.06.02.10	As-Built Documentation of the local cable network Zmajevo	set	1		CRSC
	Total: Local cable network Zmajevo - works				**466.00**
	Total: Local cable network Zmajevo - material and works				
	Total: Local cable network Zmajevo - material and works - $				**4,647.60**
5.4.01.07	**Local cable network Vrbas Nova**				
5.4.01.07.01	**Material**				
5.4.01.07.01.07	Thermoshrinking joint	pcs.	5		CRSC
5.4.01.07.01.08	Thermoshrinking joint - branching	pcs.	1		CRSC
5.4.01.07.01.13	Fiber optic cable 6x9/125µm G.567.A1	m	2,250	0.00	0.00
5.4.01.07.01.14	Fiber optic cable 12x9/125µm G.567.A1	m	740	0.00	0.00
5.4.01.07.01.15	Fiber optic cable 24x9/125µm G.567.A1	m	240	0.00	0.00
5.4.01.07.01.16	Cable XP41 2x2.5mm2	m	135	2.50	337.50
5.4.01.07.01.09	Indoor 19" standalone cabinet 42U/600x800mm for power supply equipment installation and termination and protection of DC power distribution. Max. load 600kg or higher. Containing terminal blocks for AC and DC power cable termination	pcs.	1	1,265.00	1,265.00
5.4.01.07.01.10	Cable distribution cabinet for outdoor installation, with a base and insulated wire strand for connection to the return conductor of traction current FeZn 95 mm², L = 12 m. Containing terminal blocks for TK59M cable termination and fiber optic splice closure for splicing	pcs.	3	930.60	2,791.80
5.4.01.07.01.11	Cable terminal box for indoor installation KG 10×2, with fuses	pcs.	0	107.68	0.00
5.4.01.07.01.12	Terminal strips for 10x2 for filled cables	pcs.	0	41.75	0.00
5.4.01.07.01.17	Indoor wallmount cabinet with DC and AC terminal blocks, fiber optic splice box with adapters, RJ-45 modules and corresponding fiber optic and S/FTP patch cables included.	set	1	321.00	321.00
5.4.01.07.01.18	Equipment for installation in indoor wallmount cabinet: - Layer 2 switch (1x1000Base-LX 20km SFP module, min. 6x1000Base-T PoE ports, 230VAC power supply) - 230VAC/24VDC converter	set	1	761.00	761.00
	Total: Local cable network Vrbas Nova - material				**5,476.30**
5.4.01.07.02	**Works**				
5.4.01.07.02.01	Laying of cable TK 59 and XP41	m	3,365		CRSC
5.4.01.07.02.02	Instalation of thermoshrinking joint	pcs.	5		CRSC
5.4.01.07.02.03	Installation of thermoshrinking joint - branching	pcs.	1		CRSC
5.4.01.07.02.04	Installation of indoor 19" standalone cabinet for power supply equipment; termination of AC and DC power cables	pcs.	1	112.00	112.00
5.4.01.07.02.05	Placement and installation of cable distribution cabinet and connection to the closer rail using insulated wire rope FeZn 95 mm²; termination of TK59M cables and splicing of fibers according to the design schemes	pcs.	3	224.00	672.00
5.4.01.07.02.06	Installation of cable terminal box for indoor installation KG 10×2, with fuses	pcs.	0	0.00	0.00
5.4.01.06.02.12	Installation of wallmount cabinet; termination of TK59M, J-H(St)H, S/FTP, XP41 and N2XH-J cables and splicing of fibers according to the design schemes	set	1	85.00	85.00

5.4.01.06.02.13	Installation and connection of equipment in indoor wallmount cabinet	set	1	45.00	45.00
5.4.01.06.02.07	Planning of laying local cables	set			CRSC
5.4.01.06.02.08	Installation of terminal strip 10x2 with placing the cables on it	pcs.	0	5.10	0.00
5.4.01.06.02.09	Measuring and testing of the local cable network Vrbas Nova	set	1		CRSC
5.4.01.06.02.10	As-Built Documentation of the local cable network Vrbas Nova	set	1		CRSC
	Total: Local cable network Vrbas Nova - works				**914.00**
	Total: Local cable network Vrbas Nova - material and works				
	Total: Local cable network Vrbas Nova - material and works - $				**6,390.30**
5.4.01.08	**Local cable network Vrbas**				
5.4.01.08.01	**Material**				
5.4.01.08.01.07	Sand	m^3	32		CRSC
5.4.01.08.01.08	Warning tape - yellow - 80 mm	m	800		CRSC
5.4.01.08.01.09	PVC shield - 1 m	pcs.	800		CRSC
5.4.01.08.01.10	Hard PVC pipe, yellow, Ø110mm, L = 6 m	pcs.	4		CRSC
5.4.01.08.01.11	Concrete markers	pcs.	4		CRSC
5.4.01.08.01.12	Thermosh+B221:B231rinking joint	pcs.	1		CRSC
5.4.01.08.01.13	Thermoshrinking joint - branching	pcs.	1		CRSC
5.4.01.08.01.18	Fiber optic cable 6x9/125µm G.567.A1	m	3,230	0.00	0.00
5.4.01.08.01.19	Fiber optic cable 12x9/125µm G.567.A1	m	2,250	0.00	0.00
5.4.01.08.01.20	Fiber optic cable 24x9/125µm G.567.A1	m	740	0.00	0.00
5.4.01.08.01.14	Indoor 19" standalone cabinet 42U/600x800mm for power supply equipment installation and termination and protection of DC power distribution. Max. load 600kg or higher. Containing terminal blocks for AC and DC power cable termination	pcs.	1	1,265.00	1,265.00
5.4.01.08.01.15	Cable distribution cabinet for outdoor installation, with a base and insulated wire strand for connection to the return conductor of traction current FeZn 95 mm², L = 12 m. Containing terminal blocks for TK59M cable termination and fiber optic splice closure for splicing	pcs.	2	930.60	1,861.20
5.4.01.08.01.16	Cable terminal box for indoor installation KG 10×2, with fuses	pcs.	0	107.68	0.00
5.4.01.08.01.17	Terminal strips for 10x2 for filled cables	pcs.	0	41.75	0.00
	Total: Local cable network Vrbas - material				**3,126.20**
5.4.01.08.02	**Works**				
5.4.01.08.02.01	Excavation od new trench 0,4×0,8 m, spreading a layer of sand d = 10 cm, placing shields and warning tape, backfilling and compacting in three layers, disposing of surplus earth to a marked site	m	800		CRSC
5.4.01.08.02.02	Construction of an underpass ubderneath the track or road 1x2xØ110 mm, L = 7 m	set	15		CRSC
5.4.01.08.02.03	Laying of cable TK 59	m	3,230		CRSC
5.4.01.08.02.04	Instalation of thermoshrinking joint	pcs.	1		CRSC
5.4.01.08.02.05	Installation of thermoshrinking joint - branching	pcs.	1		CRSC
5.4.01.08.02.14	Installation of indoor 19" standalone cabinet for power supply equipment; termination of AC and DC power cables	pcs.	1	112.00	112.00
5.4.01.08.02.07	Placement and installation of cable distribution cabinet and connection to the closer rail using insulated wire rope FeZn 95 mm²; termination of TK59M cables and splicing of fibers according to the design schemes	pcs.	2	224.00	448.00
5.4.01.08.02.08	Installation of cable terminal box for indoor installation KG 10×2, with fuses	pcs.	0	67.20	0.00

5.4.01.08.02.09	Installation of terminal strip 10x2 with placing the cables on it	set	0	5.10	0.00
5.4.01.08.02.10	Planning of laying local cables	set	1		0.00
5.4.01.08.02.11	Measuring and testing of the local cable network Vrbas	set	1		0.00
5.4.01.08.02.12	As-Built Documentation of the local cable network Vrbas		1		CRSC
	Total: Local cable network Vrbas - works				**560.00**
	Total: Local cable network Vrbas - material and works				
	Total: Local cable network Vrbas - material and works - $				**3,686.20**
5.4.01.09	**Local cable network Lovcenac**				
5.4.01.09.01	**Material**				
5.4.01.09.01.07	Thermoshrinking joint	pcs.	5		CRSC
	Thermoshrinking joint - branching	pcs.	0		CRSC
5.4.01.09.01.12	Fiber optic cable 6x9/125µm G.567.A1	m	2,115	0.00	0.00
5.4.01.09.01.13	Fiber optic cable 12x9/125µm G.567.A1	m	820	0.00	0.00
5.4.01.09.01.14	Fiber optic cable 24x9/125µm G.567.A1	m		0.00	0.00
5.4.01.09.01.15	Cable XP41 2x2.5mm2	m	100	2.50	250.00
5.4.01.09.01.08	Indoor 19" standalone cabinet 42U/600x800mm for power supply equipment installation and termination and protection of DC power distribution. Max. load 600kg or higher. Containing terminal blocks for AC and DC power cable termination	pcs.	1	1,265.00	1,265.00
5.4.01.09.01.09	Cable distribution cabinet for outdoor installation, with a base and insulated wire strand for connection to the return conductor of traction current FeZn 95 mm², L = 12 m. Containing terminal blocks for TK59M cable termination and fiber optic splice closure for splicing	pcs.	2	930.60	1,861.20
5.4.01.09.01.10	Cable terminal box for indoor installation KG 10×2, with fuses	pcs.	0	107.68	0.00
5.4.01.09.01.11	Terminal strips for 10x2 for filled cables	pcs.	0	41.75	0.00
5.4.01.09.01.15	Indoor wallmount cabinet with AC terminal blocks and RJ-45 modules; corresponding fiber optic and S/FTP patch cables included	set	1	321.00	321.00
5.4.01.09.01.16	Equipment for installation in indoor wallmount cabinet: Layer 2 switch (1x1000Base-LX 20km SFP module, min. 4x1000Base-T PoE ports, ERPS ITU-T G.8032 support, 230VAC power supply)	set	1	761.00	761.00
5.4.01.09.01.17	Uninterruptible power supply system min. 2000VA 230VAC with internal battery set 48VDC min. 7Ah	set	1	904.00	904.00
	Total: Local cable network Lovcenac - material	pcs.			**5,362.20**
5.4.01.09.02	**Works**				
5.4.01.09.02.01	Laying of cable TK 59 and XP41	m	3,215		CRSC
5.4.01.09.02.02	Instalation of thermoshrinking joint	pcs.	5		CRSC
5.4.01.09.02.03	Installation of thermoshrinking joint - branching	pcs.	0		CRSC
5.4.01.09.02.04	Installation of wall conastruction for local cables and transformers	pcs.	1	112.00	112.00
5.4.01.09.02.05	Placement and installation of cable distribution cabinet and connection to the closer rail using insulated wire rope FeZn 95 mm²	pcs.	2	224.00	448.00
5.4.01.09.02.06	Installation of cable terminal box for indoor installation KG 10×2, with fuses	pcs.	0	67.20	0.00
5.4.01.09.02.07	Installation of terminal strip 10x2 with placing the cables on it	pcs.	0	5.10	0.00
5.4.01.09.02.12	Installation of wallmount cabinet; termination of TK59M and S/FTP cables according to the design schemes	set	1	85.00	85.00
5.4.01.09.02.13	Installation and connection of equipment in indoor wallmount cabinet	set	1	45.00	45.00
5.4.01.09.02.08	Planning of laying local cables	set	1		CRSC

5.4.01.09.02.09	Measuring and testing of the local cable network Lovcenac	set	1		CRSC
5.4.01.09.02.10	As-Built Documentation of the local cable network Lovcenac	set	1		CRSC
	Total: Local cable network Lovcenac - works				**690.00**
	Total: Local cable network Lovcenac - material and works				
	Total: Local cable network Lovcenac - material and works - $				**6,052.20**
5.4.01.10	**Local cable network Backa Topola**				
5.4.01.10.01	**Material**				
5.4.01.10.01.07	Thermoshrinking joint	pcs.	6		CRSC
	Thermoshrinking joint - branching	pcs.	0		CRSC
5.4.01.10.01.12	Fiber optic cable 6x9/125µm G.567.A1	m	1,845	0.00	0.00
5.4.01.10.01.13	Fiber optic cable 12x9/125µm G.567.A1	m	740	0.00	0.00
5.4.01.10.01.14	Fiber optic cable 24x9/125µm G.567.A1	m		0.00	0.00
5.4.01.10.01.08	Indoor 19" standalone cabinet 42U/600x800mm for power supply equipment installation and termination and protection of DC power distribution. Max. load 600kg or higher. Containing terminal blocks for AC and DC power cable termination	pcs.	1	1,265.00	1,265.00
5.4.01.10.01.09	Cable distribution cabinet for outdoor installation, with a base and insulated wire strand for connection to the return conductor of traction current FeZn 95 mm², L = 12 m. Containing terminal blocks for TK59M cable termination and fiber optic splice closure for splicing	pcs.	2	930.60	1,861.20
5.4.01.10.01.10	Cable terminal box for indoor installation KG 10×2, with fuses	pcs.	0	107.68	0.00
5.4.01.10.01.11	Terminal strips for 10x2 for filled cables	pcs.	0	41.75	0.00
5.4.01.10.01.15	Indoor wallmount cabinet with DC and AC terminal blocks, fiber optic splice box with adapters, RJ-45 modules and corresponding fiber optic and S/FTP patch cables included.	set	1	368.00	368.00
5.4.01.10.01.16	Equipment for installation in indoor wallmount cabinet: - Layer 2 switch (1x1000Base-LX 20km SFP module, min. 6x1000Base-T PoE ports, 230VAC power supply) - 230VAC/24VDC converter	set	1	1,009.29	1,009.29
5.4.01.10.01.17	Indoor wallmount cabinet with AC terminal blocks and RJ-45 modules; corresponding fiber optic and S/FTP patch cables included	set	1	321.00	321.00
5.4.01.10.01.18	Equipment for installation in indoor wallmount cabinet: Layer 2 switch (1x1000Base-LX 20km SFP module, min. 4x1000Base-T PoE ports, ERPS ITU-T G.8032 support, 230VAC power supply)	set	1	761.00	761.00
5.4.01.10.01.19	Uninterruptible power supply system min. 2000VA 230VAC with internal battery set 48VDC min. 7Ah	set	1	904.00	904.00
	Total: Local cable Backa Topola - material				**6,489.49**
5.4.01.10.02	**Works**				
5.4.01.10.02.01	Laying of cable TK 59	m	3,115		CRSC
5.4.01.10.02.02	Instalation of thermoshrinking joint	pcs.	6		CRSC
5.4.01.10.02.03	Installation of thermoshrinking joint - branching	pcs.	0		CRSC
5.4.01.10.02.04	Installation of indoor 19" standalone cabinet for power supply equipment; termination of AC and DC power cables	pcs.	1	112.00	112.00
5.4.01.10.02.05	Placement and installation of cable distribution cabinet and connection to the closer rail using insulated wire rope FeZn 95 mm²; termination of TK59M cables and splicing of fibers according to the design schemes	pcs.	2	224.00	448.00

5.4.01.10.02.06	Installation of cable terminal box for indoor installation KG 10×2, with fuses	pcs.	0	67.20	0.00
5.4.01.10.02.07	Installation of terminal strip 10x2 with placing the cables on it	pcs.	0	5.10	0.00
5.4.01.10.02.12	Installation of wallmount cabinet; termination of TK59M, J-H(St)H, S/FTP, XP41 and N2XH-J cables and splicing of fibers according to the design schemes	set	1	238.00	238.00
5.4.01.10.02.13	Installation of wallmount cabinet; termination of TK59M and S/FTP cables according to the design schemes	set	1	85.00	85.00
5.4.01.10.02.14	Installation and connection of equipment in indoor wallmount cabinet	set	2	45.00	90.00
5.4.01.10.02.08	Planning of laying local cables	set	1		CRSC
5.4.01.10.02.09	Measuring and testing of the local cable network Bačka Topola	set	1		CRSC
5.4.01.10.02.10	As-Built Documentation of the local cable network Bačka Topola	set	1		CRSC
	Total: Local cable network Backa Topola - works				**973.00**
	Total: Local cable network Backa Topola - material and works				
	Total: Local cable network Backa Topola - material and works - $				**7,462.49**
5.4.01.11	**Local cable network Zednik**				
5.4.01.11.01	**Material**				
5.4.01.11.01.07	Thermoshrinking joint	pcs.	5		CRSC
5.4.01.11.01.08	Thermoshrinking joint - branching	pcs.	0		CRSC
5.4.01.11.01.13	Fiber optic cable 6x9/125µm G.567.A1	m	2,330	0.00	0.00
5.4.01.11.01.14	Fiber optic cable 12x9/125µm G.567.A1	m	610	0.00	0.00
5.4.01.11.01.15	Fiber optic cable 24x9/125µm G.567.A1	m		0.00	0.00
5.4.01.11.01.09	Indoor 19" standalone cabinet 42U/600x800mm for power supply equipment installation and termination and protection of DC power distribution. Max. load 600kg or higher. Containing terminal blocks for AC and DC power cable termination	pcs.	1	1,265.00	1,265.00
5.4.01.11.01.10	Cable distribution cabinet for outdoor installation, with a base and insulated wire strand for connection to the return conductor of traction current FeZn 95 mm², L = 12 m. Containing terminal blocks for TK59M cable termination and fiber optic splice closure for splicing	pcs.	2	930.60	1,861.20
5.4.01.11.01.11	Cable terminal box for indoor installation KG 10×2, with fuses	pcs.	0	107.68	0.00
5.4.01.11.01.12	Terminal strips for 10x2 for filled cables	pcs.	0	41.75	0.00
5.4.01.11.01.16	Indoor wallmount cabinet with AC terminal blocks and RJ-45 modules; corresponding fiber optic and S/FTP patch cables included	set	1	321.00	321.00
5.4.01.11.01.17	Equipment for installation in indoor wallmount cabinet: Layer 2 switch (1x1000Base-LX 20km SFP module, min. 4x1000Base-T PoE ports, ERPS ITU-T G.8032 support, 230VAC power supply)	set	1	761.00	761.00
5.4.01.11.01.18	Uninterruptible power supply system min. 2000VA 230VAC with internal battery set 48VDC min. 7Ah	set	1	904.00	904.00
	Local cable network Zednik - material				**5,112.20**
5.4.01.11.02	**Works**				
5.4.01.11.02.01	Laying of cable TK 59	m	3,160		CRSC
5.4.01.11.02.02	Instalation of thermoshrinking joint	pcs.	5		CRSC
5.4.01.11.02.03	Installation of thermoshrinking joint - branching	pcs.	0		CRSC
5.4.01.11.02.04	Installation of indoor 19" standalone cabinet for power supply equipment; termination of AC and DC power cables	pcs.	1	112.00	112.00

5.4.01.11.02.05	Placement and installation of cable distribution cabinet and connection to the closer rail using insulated wire rope FeZn 95 mm²; termination of TK59M cables and splicing of fibers according to the design schemes	pcs.	2	224.00	448.00
5.4.01.11.02.06	Installation of cable terminal box for indoor installation KG 10×2, with fuses	pcs.	0	67.20	0.00
5.4.01.11.02.07	Installation of terminal strip 10x2 with placing the cables on it	pcs.	0	5.10	0.00
5.4.01.11.02.12	Installation of wallmount cabinet; termination of TK59M and S/FTP cables according to the design schemes	set	1	85.00	85.00
5.4.01.11.02.13	Installation and connection of equipment in indoor wallmount cabinet	set	1	45.00	45.00
5.4.01.11.02.08	Planning of laying local cables	set	1		CRSC
5.4.01.11.02.09	Measuring and testing of the local cable network Žednik	set	1		CRSC
5.4.01.11.02.10	As-Built Documentation of the local cable network Žednik	set	1		CRSC
	Local cable network Zednik - works				**690.00**
	Total 11. Local cable network Zednik - material and works				
	Total 11. Local cable netowrk Zednik - material and works - $				**5,802.20**
5.4.01.12	**Local cable network Naumovicevo**				
5.4.01.12.01	**Material**				
5.4.01.12.01.08	Heatshrinking joint	pcs.	3		CRSC
5.4.01.12.01.09	Thermoshrinking joint - branching	pcs.	0		CRSC
5.4.01.12.01.15	Fiber optic cable 6x9/125µm G.567.A1	m	1,185	0.00	0.00
5.4.01.12.01.16	Fiber optic cable 12x9/125µm G.567.A1	m	1,100	0.00	0.00
5.4.01.12.01.17	Fiber optic cable 24x9/125µm G.567.A1	m	615	0.00	0.00
5.4.01.12.01.10	Cabinet for installation of cable terminal box with fuses KG 10×2 indoor cable terminal boxи KG 10×2 wizh pole and foundation, and insulated wire strnad for connection to the return conductor of traction current FeZn 95 mm², L = 5 m	pcs.	0	930.60	0.00
5.4.01.12.01.11	Indoor cable terminal box KG 10×2 with fuses	pcs.	0	107.68	CRSC
5.4.01.12.01.12	Indoor 19" standalone cabinet 42U/600x800mm for power supply equipment installation and termination and protection of DC power distribution. Max. load 600kg or higher. Containing terminal blocks for AC and DC power cable termination	pcs.	1	1,265.00	1,265.00
5.4.01.12.01.13	Cable distribution cabinet for outdoor installation, with a base and insulated wire strand for connection to the return conductor of traction current FeZn 95 mm², L = 12 m. Containing terminal blocks for TK59M cable termination and fiber optic splice closure for splicing	pcs.	2	930.60	1,861.20
5.4.01.12.01.14	Terminal strips for 10x2 for filled cables	pcs.	0	41.75	0.00
	Local cable network Naumovicevo - material				**3,126.20**
5.4.01.12.02	**Works**				
5.4.01.12.02.01	Laying of cable TK 59	m	2,285		CRSC
5.4.01.12.02.02	Instalation of thermoshrinking joint	pcs.	3		CRSC
5.4.01.12.02.03	Installation of thermoshrinking joint - branching	pcs.	0	0.00	CRSC
5.4.01.12.02.04	Installation of indoor 19" standalone cabinet for power supply equipment; termination of AC and DC power cables	pcs.	1	112.00	112.00
5.4.01.12.02.05	Placement and installation of cable distribution cabinet and connection to the closer rail using insulated wire rope FeZn 95 mm²; termination of TK59M cables and splicing of fibers according to the design schemes	pcs.	2	224.00	448.00

5.4.01.12.02.06	Installation of cable terminal box for indoor installation KG 10×2, with fuses inthe ETS	pcs.	0	0.00	CRSC
5.4.01.12.02.07	Installation of terminal strip 10x2 with placing the cables on it	pcs.	0	5.10	0.00
5.4.01.12.02.08	Planning of laying local cables	set	1		CRSC
5.4.01.12.02.09	Measuring and testing of the local cable network Naumovicevo	set	1		CRSC
5.4.01.12.02.10	As-Built Documentation of the local cable network Naumovicevo	set	1		CRSC
	Local cable network Naumovicevo - works				**560.00**
	Total 12. Local cable network Naumovicevo - maretial and works - материјал и радови				
	Total 12. Local cable network Naumovicevo - maretial and works - материјал и радови - $				**3,686.20**
5.4.01.13	**Local cable network Subotica**				
5.4.01.13.01	**Material**				
5.4.01.13.01.11	Thermoshrinking joint	pcs.	10		CRSC
5.4.01.13.01.12	Thermoshrinking joint - branching	pcs.	2		CRSC
5.4.01.13.01.17	Fiber optic cable 6x9/125µm G.567.A1	m	5,595	0.00	0.00
5.4.01.13.01.18	Fiber optic cable 12x9/125µm G.567.A1	m	1,630	0.00	0.00
5.4.01.13.01.19	Fiber optic cable 24x9/125µm G.567.A1	m	1,810	0.00	0.00
5.4.01.13.01.13	Indoor 19" standalone cabinet 42U/600x800mm for power supply equipment installation and termination and protection of DC power distribution. Max. load 600kg or higher. Containing terminal blocks for AC and DC power cable termination	pcs.	1	1,265.00	1,265.00
5.4.01.13.01.14	Cable distribution cabinet for outdoor installation, with a base and insulated wire strand for connection to the return conductor of traction current FeZn 95 mm², L = 12 m. Containing terminal blocks for TK59M cable termination and fiber optic splice closure for splicing	pcs.	7	930.60	6,514.20
5.4.01.13.01.15	Cable terminal box for indoor installation KG 10×2, with fuses	pcs.	0	107.68	0.00
5.4.01.13.01.16	Terminal strips for 10x2 for filled cables	pcs.	0	41.75	0.00
5.4.01.13.01.20	Indoor wallmount cabinet with AC terminal blocks and RJ-45 modules; corresponding fiber optic and S/FTP patch cables included	set	1	321.00	321.00
5.4.01.13.01.21	Equipment for installation in indoor wallmount cabinet: Layer 2 switch (2x1000Base-LX 20km SFP modules, min. 4x1000Base-T PoE ports, ERPS ITU-T G.8032 support, 230VAC power supply)	set	1	761.00	761.00
5.4.01.13.01.21	Uninterruptible power supply system min. 2000VA 230VAC with internal battery set 48VDC min. 7Ah	set	1	904.00	904.00
	Local cable network Subotica - material				**9,765.20**
5.4.01.13.02	**Works**				
5.4.01.13.02.01	Laying of cable TK 59	m	9,365		CRSC
5.4.01.13.02.02	Instalation of thermoshrinking joint	pcs.	10		CRSC
5.4.01.13.02.03	Installation of thermoshrinking joint - branching	pcs.	2		CRSC
5.4.01.13.02.04	Installation of indoor 19" standalone cabinet for power supply equipment; termination of AC and DC power cables	pcs.	1	112.00	112.00
5.4.01.13.02.05	Placement and installation of cable distribution cabinet and connection to the closer rail using insulated wire rope FeZn 95 mm²; termination of TK59M cables and splicing of fibers according to the design schemes	pcs.	7	224.00	1,568.00
5.4.01.13.02.06	Installation of cable terminal box for indoor installation KG 10×2, with fuses	pcs.	0	67.20	0.00
5.4.01.13.02.12	Installation of wallmount cabinet; termination of TK59M and S/FTP cables according to the design schemes	set	1	85.00	85.00

5.4.01.13.02.13	Installation and connection of equipment in indoor wallmount cabinet	set	1	45.00	45.00
5.4.01.13.02.07	Planning of laying local cables	set	1		CRSC
5.4.01.13.02.08	Installation of terminal strip 10x2 with placing the cables on it	pcs.	0	5.10	0.00
5.4.01.13.02.09	Measuring and testing of the local cable network Subotica	s	1		CRSC
5.4.01.13.02.10	As-Built Documentation of the local cable network Subotica	s	1		CRSC
	Local cable network Subotica - works				**1,810.00**
	Total 13. Local cable network Subotica - material and works				
	Total 13. Local cable network Subotica - material and works - $				**11,575.20**
5.4.01.14	**Electric traction subtation Novi Sad (Sajlovo)**				
5.4.01.14.01	**Material**				
5.4.01.14.01.02	Thermoshrinking joint	pcs.	0	236.73	0.00
5.4.01.14.01.03	LB telephone - wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	1	641.38	641.38
5.4.01.14.01.04	CB telephone - wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	1	195.00	195.00
5.4.01.14.01.05	Indoor cable terminal box KG 10×2 with fuses	pcs.	0	107.68	0.00
5.4.01.14.01.09	Indoor wallmount cabinet with AC terminal blocks and RJ-45 modules; corresponding fiber optic and S/FTP patch cables included	set	1	321.00	321.00
5.4.01.14.01.10	Equipment for installation in indoor wallmount cabinet: - Layer 2 switch (2x1000Base-LX 20km SFP modules, min. 4x1000Base-T PoE ports, ERPS ITU-T G.8032 support, 230VAC power supply)	set	1	761.00	761.00
5.4.01.14.01.11	Uninterruptible power supply system min. 2000VA 230VAC with internal battery set 48VDC min. 7Ah	set	1	904.00	904.00
5.4.01.14.01.06	JH(St)H 2x2x0.8	m	0	1.20	0.00
5.4.01.14.01.07	JH(St)H 10x2x0.8	m	0		0.00
5.4.01.14.01.08	JH(St)H 20x2x0.8	m	0		0.00
5.4.01.14.01.12	Cable S/FTP cat. 6a	m	80	1.20	96.00
	ETS Novi Sad - material				**2,918.38**
5.4.01.14.02	**Works**				
5.4.01.14.02.01	Laying of cable TK 39 P	m	0	1.12	0.00
5.4.01.14.02.02	Installation of thermoshrinking joint	pcs.	0	134.40	0.00
5.4.01.14.02.03	Installation of cable terminal box KG 10×2 with fuses	pcs.	0	67.20	0.00
5.4.01.14.02.05	Installation of wallmount cabinet; termination of power and S/FTP cables according to the design schemes	set	1	112.00	112.00
5.4.01.14.02.06	Installation and connection of equipment in the cabinet	set	1	45.00	45.00
5.4.01.14.02.04	Laying of cable JH(St)H, S/FTP	m	80	1.12	89.60
	ETS Novi Sad - works				**246.60**
	14. ETS Novi Sad - material and works				
	14. ETS Novi Sad - material and works - $				**3,164.98**
5.4.01.15	**Electric traction subtation Vrbas**				
5.4.01.15.01	**Material**				
5.4.01.15.01.02	Thermoshrinking joint	pcs.	0	236.73	0.00
5.4.01.15.01.03	LB telephone - wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	1	641.38	641.38
5.4.01.15.01.04	CB telephone - wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	1	195.00	195.00
5.4.01.15.01.05	Indoor cable terminal box KG 10×2 with fuses	pcs.	0	107.68	0.00
5.4.01.15.01.09	Indoor wallmount cabinet with AC terminal blocks and RJ-45 modules; corresponding fiber optic and S/FTP patch cables included	set	1	321.00	321.00

5.4.01.15.01.10	Equipment for installation in indoor wallmount cabinet: - Layer 2 switch (2x1000Base-LX 20km SFP modules, min. 4x1000Base-T PoE ports, ERPS ITU-T G.8032 support, 230VAC power supply)	set	1	761.00	761.00
5.4.01.15.01.11	Uninterruptible power supply system min. 2000VA 230VAC with internal battery set 48VDC min. 7Ah	set	1	904.00	904.00
5.4.01.15.01.06	JH(St)H 2x2x0.8	m	0	1.20	0.00
5.4.01.15.01.07	JH(St)H 10x2x0.8	m	0		0.00
5.4.01.15.01.08	JH(St)H 20x2x0.8	m	0		0.00
5.4.01.15.01.12	Cable S/FTP cat. 6a	m	80	1.20	96.00
	ETS Vrbas - material				**2,918.38**
5.4.01.15.02	**Works**				
5.4.01.15.02.01	Laying of cable TK 39 P	m	0	1.12	0.00
5.4.01.15.02.02	Installation of thermoshrinking joint	pcs.	0	134.40	0.00
5.4.01.15.02.03	Installtaion of cable terminal box KG 10×2 with fuses	pcs.	0	67.20	0.00
5.4.01.15.02.05	Installation of wallmount cabinet; termination of power and S/FTP cables according to the design schemes	set	1	112.00	112.00
5.4.01.15.02.06	Installation and connection of equipment in the cabinet	set	1	45.00	45.00
5.4.01.15.02.04	Laying of cable JH(St)H, S/FTP	m	80	1.12	89.60
	ETS Vrbas- works				**246.60**
	15. ETS Vrbas- material and works				
	15. ETS Vrbas - material and works - $				**3,164.98**
5.4.01.16	**Electric traction subtation Subotica (Naumovićevo)**				
5.4.01.16.01	**Material**				
5.4.01.16.01.01	Cabinet for installation of terminal boxes with foundation, complete with earthing strand for connection to the closer rail L=5 m/95 mm2, with eyelet Ø10 mm	pcs.	0	930.60	0.00
5.4.01.16.01.04	Heat shrinking joint	pcs.	0	236.73	0.00
5.4.01.16.01.05	Indoor cable terminal box KG 10×2	pcs.	0	107.68	0.00
5.4.01.16.01.06	Indoor cable terminal box KG 10×2 with fuses	pcs.	0	107.68	0.00
5.4.01.16.01.12	Indoor wallmount cabinet with AC terminal blocks and RJ-45 modules; corresponding fiber optic and S/FTP patch cables included	set	1	321.00	321.00
5.4.01.16.01.13	Equipment for installation in indoor wallmount cabinet: - Layer 2 switch (2x1000Base-LX 20km SFP modules, min. 4x1000Base-T PoE ports, ERPS ITU-T G.8032 support, 230VAC power supply)	set	1	761.00	761.00
5.4.01.16.01.14	Uninterruptible power supply system min. 2000VA 230VAC with internal battery set 48VDC min. 7Ah	set	1	904.00	904.00
5.4.01.16.01.07	LB telephone - wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	1	641.38	641.38
5.4.01.16.01.08	CB telephone - wall mount, Gigabit Ethernet interface for VoIP communication	pcs.	1	195.00	195.00
5.4.01.16.01.09	JH(St)H 2x2x0.8	m	0	1.20	0.00
5.4.01.16.01.10	JH(St)H 10x2x0.8	m	0		0.00
5.4.01.16.01.11	JH(St)H 20x2x0.8	m	0		0.00
5.4.01.16.01.15	Cable S/FTP cat. 6a	m	80	1.20	96.00
	ETS Subotica - material				**2,918.38**

5.4.01.16.02	**Works**				
5.4.01.16.02.01	Installation of the cabinet with foundation, introduction and connection of the cables TK 59 M 5×4×0,8 and connection of earthing strand	pcs.	0	224.00	0.00
5.4.01.16.02.02	Laying of cable TK 39 P	m	0	1.12	0.00
5.4.01.16.02.03	Installation od heat shrinking joint	pcs.	0	134.40	0.00
5.4.01.16.02.04	Insraallation cable terminal box KG 10×2 with fuses	pcs.	0	67.20	0.00
5.4.01.16.02.05	Insraallaton cable terminal box KG 10×2 with fuses	pcs.	0	67.20	0.00
5.4.01.16.02.07	Installation of wallmount cabinet; termination of power and S/FTP cables according to the design schemes	set	1	112.00	112.00
5.4.01.16.02.08	Installation and connection of equipment in the cabinet	set	1	45.00	45.00
5.4.01.16.02.06	Laying of cable JH(St)H, S/FTP	m	80	1.12	89.60
	ETS Subotica - works				**246.60**
	16. ETS Subotica- material and works				
	16. ETS Subotica - material and works - $				**3,164.98**
	TOTAL LOCAL CABLE NETWORKS				**80,633.33**

Party A, Mr. XU YANG

Party B, Nikola Tomašević

BILL OF QUANTITIES FOR PART - 8 , APPENDIX-1
RADIO DISPATCHING SYSTEM (RDV)

No.	Contents	System	Type	pcs	Num	Unit-Price (USD)	Price (USD)
1	Trackside radio station with all nessesary equipment (antennas, distributor, cables with connectors, rack, rectifier, batteries, additional equipment,...)	EXISTING RADIO DISPATCHING SYSTEM (RDV)	Material	set	8.00	48,454.56	387,636.48
2	Central equinment with all nessesary equipment (rack, server, media convertor, 4-channel recording system,work station, rectifier, batteries, additional equipment, ...), adeqate software (adjusted based on the railway company demands), licences,...	EXISTING RADIO DISPATCHING SYSTEM (RDV)	Material	set	1.00	164,496.00	164,496.00
3	Standard concrete housing unit for trackside radio station with foundation and additional materiala nad installation	EXISTING RADIO DISPATCHING SYSTEM (RDV)	Material	set	2.00	6,094.08	12,188.16
4	RDV wireless sysytem einforcement	EXISTING RADIO DISPATCHING SYSTEM (RDV)	Material	set	1.00	4,600.00	4,600.00
5	Dismantling the equipment of existing trackside radio-stations (devices, cables, antennas, additional equippment...) and hand over to the Investor in the present state, on set location	EXISTING RADIO DISPATCHING SYSTEM (RDV)	Works	set	6.00	662.40	3,974.40
6	Dismantling the housing for the trackside radio-station and hand over to the Investor in the present state, on set location	EXISTING RADIO DISPATCHING SYSTEM (RDV)	Works	set	1.00	1,192.32	1,192.32
7	Dismantling the equipment of existing analog radio central equipment (devices, cables, antennas, additional equippment...) and hand over to the Investor in the present state, on set location	EXISTING RADIO DISPATCHING SYSTEM (RDV)	Works	set	1.00	1,104.00	1,104.00
8	Installation of the standard concrete housing unit for trackside radio station with foundation and additional materiala nad installation	EXISTING RADIO DISPATCHING SYSTEM (RDV)	Works	set	2.00	1,258.56	2,517.12
9	Preparation of the Study of the railway coverage by the electromagnetic field of the locomotive radio dispatching system	EXISTING RADIO DISPATCHING SYSTEM (RDV)	Works	set	1.00	9,200.00	9,200.00
10	Theoretical calculation of EM fields for determining the locations of radio stations of an analog radio system	EXISTING RADIO DISPATCHING SYSTEM (RDV)	Works	set	1.00	4,600.00	4,600.00
11	EM field measurement for determining the locations of radio stations of an analog radio system	EXISTING RADIO DISPATCHING SYSTEM (RDV)	Works	set	1.00	11,040.00	11,040.00
12	Installation and connection of the equipment of the system	EXISTING RADIO DISPATCHING SYSTEM (RDV)	Works	set	1.00	24,840.00	24,840.00

13	Commissioning of all equipment (basic functionality with check of all points of the network)	EXISTING RADIO DISPATCHING SYSTEM (RDV)	Works	set	1.00	6,568.80	6,568.80
14	Integration of equipment (basic functionality with check of all points of the network) and testing for the Owner /Investor's basic acceptance - for the entire section	EXISTING RADIO DISPATCHING SYSTEM (RDV)	Works	set	1.00	5,464.80	5,464.80
15	Optimization & Additional features integration	EXISTING RADIO DISPATCHING SYSTEM (RDV)	Works	set	1.00	2,760.00	2,760.00
16	Global Acceptance & Verification - for the whole line	EXISTING RADIO DISPATCHING SYSTEM (RDV)	Works	set	1.00	920.00	920.00
17	User training (for the entire section)	EXISTING RADIO DISPATCHING SYSTEM (RDV)	Works	set	1.00	1,840.00	1,840.00
18	Designing and preparation of documentation (for the entire section, including the as-built documentation)	EXISTING RADIO DISPATCHING SYSTEM (RDV)	Works	set	1.00	3,680.00	3,680.00
						TOTAL(USD):	**648,622.08**

Party A, Mr. XU YANG

Party B, Nikola Tomašević